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Transfusing patients with anemia
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Prescribe antibiotics wisely
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The Hospitalist

VOLUME 21 No. 12 | DECEMBER 2017

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Managing mental health care at the hospital

Care integration is more of an attitude than a system

By Suzanne Bopp

The numbers tell a grim story. Nationwide, 43.7 million adult Americans experienced a mental health condition during 2016 – an increase of 1.2 million over the previous year. Mental health issues send almost 5.5 million people to emergency departments each year; nearly 60% of adults with a mental illness received no treatment at all.

If that massive – and growing – need is one side of the story, shrinking resources are the other. Mental health resources had already been diminishing for decades before the recession hit – and hit them especially hard. Between 2009 and 2012, states cut $5 billion in mental health services; during that time, at least 4,500 public psychiatric hospital beds nationwide disappeared – nearly 10% of the total supply. The bulk of those resources have never been restored.

Provider numbers also are falling. "Psychiatry is prob-

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How will SNF readmissions penalties affect hospitalists?

Post-acute care utilization is rising, resulting in rapidly increasing costs

By Larry Beresford

Starting in 2018, skilled nursing facilities (SNFs), like acute care hospitals before them, will be subject to a penalty of up to 2% of their Medicare reimbursement for posting higher-than-average rates of readmissions.

The Protecting Access to Medicare Act of 2014 established a value-based purchasing component for SNFs, including incentives for high-performing facilities and a measure for all-cause, all-condition readmissions to any hospital from the SNF within 30 days following hospital discharge – designed to recognize and reward, or punish, facilities' performance on preventing unnecessary readmissions. Public reporting of SNF quality data, including readmission rates, started in October 2017. Penalties follow a year later. Some patients' readmissions could trigger penalties for both the hospital and the SNF.

According to 2010 data, 23.5% of patients discharged from acute care hospitals to SNFs were readmitted to the hospital within 30 days, at a financial cost of $10,362 per readmission or $4.34 billion per year.[1] Seventy eight percent of these readmissions were labeled avoidable. More recent evidence suggests that hospitalization rates for dual-eligible patients living in long-term care facilities decreased by 31% between 2010 and 2015.[2]

As increasing numbers of hospitalists spend some or all of their work week in post-acute care settings, how will the SNF readmission penalty affect their

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Q&A A LOVE OF TEACHING

James Kim, MD

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2016 APEX AWARDS FOR PUBLICATION EXCELLENCE

Building a better SHM

New HMX platform and website are highlights

By Brett Radler

As we enter the holiday season, the Society of Hospital Medicine is preparing to unwrap a refreshed experience for all members and partners.

Next month, SHM will launch its new association management system (AMS), its new online community platform for the Hospital Medicine Exchange (HMX), and a brand new website to better serve the needs of its constituents.

While many may be unaware of the systems and platforms SHM currently uses, an AMS is essentially SHM's EHR for its members. It houses each member's information, so the more information SHM has, the more SHM can customize the types of information you receive. All systems will be integrated so you can quickly access information on the chapter, interest group, or committee to which you belong.

What does this mean to you?

- You'll be prompted to create a new password for your SHM account. When you set up your new password, we urge you to update your profile to make sure your information is current and that you are receiving content that is most relevant to you.
- As you update your profile, you will have an opportunity to edit your email preferences. If you have previously opted out of SHM emails, we urge you to opt back in to receive information on your local chapter meetings and more targeted messages about SHM offerings tailored specifically to your interests.
- The SHM website, www.hospitalmedicine.org, will be optimized for your smartphone and tablet and have a fresh look and feel on all devices, complete with new, intuitive navigation and streamlined content – making it easier for you to find the information that is the most relevant for you in even less time.
- The Hospital Medicine Exchange (HMX) will move to an intuitive new platform to enhance your online discussions and group collaborations, including chapters, interest groups, committees, and more.

In addition to these technological enhancements, watch for a refreshed design of The Hospitalist, the Journal of Hospital Medicine, and the overall SHM brand to bring a refined, sleek look to all SHM-related products, programs, and communications.

We look forward to better serving the needs of our members and partners with these improvements and encourage you to share your thoughts at feedback@hospitalmedicine.org. TH

Mr. Radler is marketing communications manager at the Society of Hospital Medicine.

All systems will be integrated so you can quickly access information on the chapter, interest group, or committee to which you belong.

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The Hospitalist
Volume 21 Number 12 December 2017

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EVERYTHING WE SAY AND DO:

Adopting the patient's perspective

Take time to communicate, express concern

By Larry Sharp, MD, SFHM

Editor's note: "Everything We Say and Do" provides readers with thoughtful and actionable communication tactics that can positively impact patients' experience of care. In the current series of columns, physicians share how their experiences as patients have shaped their professional approach.

I have been fortunate to have had very few major health issues throughout my life. I have, however, had three major surgical procedures in the last 10 years – two total hip arthroplasties and a cataract removal with lens implant in between. The most recent THA was October 2017. Going through each procedure helped me see things from a patient's perspective, and that showed me how important little things are to a patient, things which we may not think are all that big a deal as a provider.

For example, during my first total hip arthroplasty, the surgeon took time to sit down in the room during each visit. He continued to write in the chart periodically while we spoke, but he was sitting while doing it. I could not believe the difference in how that made me feel about his visits! I felt like he was taking his time, and it put me more at ease. I knew what he was doing and why he was doing it (I had been preaching it to my team for years), and yet, it still made a difference to me.

Almost all of the medical personnel who came to care for me during my stays identified themselves and why they were there, and that made me feel comfortable, knowing who they were and their role. However, there were a few who did not do this, and that made me uncomfortable, not knowing who they were and why they were in my room. Not knowing is an uncomfortable feeling for a patient.

Almost every registered nurse who came to me with medication explained what the medicine was and why they were administering it, with the exception of one preop RN I met before to my cataract procedure. She walked up to me, told me to open my eye wide, held the affected eye open, and started dripping cold drops into my eye without explanation. She then said she would be back every 10 minutes to repeat the process. I had to inquire as to what the medication was and why there was a need for this process. It was a jolting experience, and she showed no compassion toward me as a patient or a person, even after I inquired.

This was not a good experience. Although cataract surgery was a totally new experience for me, she had obviously done this many times before and had to do it many times that day. However, she acted as if I should have known what she was going to do and as if she need not explain herself to anyone – which she did not, even after being queried.

Everyone during the admission process for all three procedures was solicitous and warm except for one person. Unfortunately, this individual was the first person to greet my wife and me when we arrived for my last total hip arthroplasty. She was seated at the welcome desk with her head down. After we arrived, she kept her head down and asked "How can I help you?" without ever looking up. I did not realize how unwelcome I would feel when the first person I encountered in the surgical preop admissions area failed to make eye contact with me. Her demeanor was nice enough, but she did not even attempt to make a personal connection with me – and she was at the welcome desk!

Overall, I had tremendously good experiences at three facilities in three different parts of the United States, but as we all know, it is the things that do not go well that stand out. I choose to use those things, along with some of the good things, as "reinforcers" for many of the patient-experience behaviors we identify as best practices.

What I say and do

During each patient encounter, I make eye contact with the patient and each person in the room and identify who I am and why I am there. I sit down during each visit unless there is simply no place for me to do so. I explain the procedures that are to take place, set expectations for those procedures, and then use "teachback" to ensure that my discussion with the patient has been effective. Setting expectations is very important to me: If you do not ensure that patients have appropriate expectations, their expectations will never be met and they will never have a good experience. I explain any new medication I am ordering, what it is for, and any possible significant side effects and again use teachback. The last thing I do is ask "What questions do you have for me today?" giving the patient permission to have questions, and then I respond to those questions with plain talk and teachback.

Why I do it

Not knowing what was going on and feeling marginalized were the most uncomfortable things I experienced as a patient. Using best practices for patient experience shows courtesy and respect. These practices show a willingness to take time with the patient and demonstrate my concern that I am effectively communicating my message for that visit. All of these behaviors decrease uncertainty and/or raise the patient's feelings of importance, thereby decreasing marginalization.

Dr. Sharp is chief hospitalist with Sound Physicians at University of Florida Health in Jacksonville.

How I do it

I remind myself each day I am on a clinical shift that my goal is to treat each patient like I would want my family (or myself) to be treated, and then I go out and do it. After "forcing" myself to put these behaviors into my rounding routine, they have become second nature, and I feel better for providing this level of care because it made me feel so good when I was cared for in this manner. TH

NEWS & NOTES

The latest news, events, programs, and SHM initiatives.

By Brett Radler

State of Hospital Medicine Survey opens next month!

➤ The 2018 *State of Hospital Medicine* Survey will begin in January and last through March with the release of the report in September 2018. Whether you are in a hospital medicine group in an academic or community setting, employed by a hospital or health system, a management company, a private group, or you serve adult or pediatric patients (or both), we need your participation.

Help us help you have the most comprehensive, up-to-date landscape of hospital medicine at your fingertips by participating. As a thank-you for your participation, your group will receive a free copy of the report. Sign up at hospitalmedicine.org/survey.

Apply for SHM's MARQUIS Med Rec Collaborative kicking off in February 2018

➤ SHM's MARQUIS Med Rec Collaborative is designed to help hospitals across the United States implement evidence-based best practice medication reconciliation process change and improvement. The collaborative is a 14-month program, spanning from prelaunch to completion.

The staff has the expertise and experience of having completed two previous mentored implementation studies, involving 23 sites and thousands of patients. The collaborative also offers numerous resources, including training materials, project management and process improvement tools for hospitals to use to adapt for their needs to improve the medication reconciliation process. Visit hospitalmedicine.org/MARQUISrecruit to learn more.

Get engaged with public policy

➤ Health care legislation is constantly evolving, and hospitalists play an important role in advocating for hospitalized patients and the hospital medicine movement. SHM is an active voice in many conversations on policy development and reform. Visit hospitalmedicine.org and sign up for the Grassroots Network to stay updated on developments in health care policy, share your experiences with health care programs and participate in policy forums.

Develop your career at Hospital Medicine 2018

➤ Don't miss SHM's Annual Conference, Hospital Medicine 2018, to be held April 8-11, 2018. in Orlando. This year, the program was created to help you develop your hospital medicine career, no matter what stage you are in. Two new tracks include *Seasoning Your Career* and the *Career Development Workshops*.

Seasoning Your Career focuses on didactics designed to augment those committed to a career in hospital medicine, including topics such as career growth and development, resiliency, work-life balance, and how practical work matters such as schedules affect your career.

The new *Career Development Workshops* track includes six sessions that aim to help you use skills that will advance

CONTINUED ON PAGE 12

SNEAK PEEK

The Hospital Leader blog

It's time to bring women leaders to the forefront

By Vineet Arora, MD, MPP, MHM

Cultivating women leaders in health care #WIMmonth #ThisIsWhatADoctorLooksLike

On my flight home from Scotland, I had a moment to watch a movie while my daughter was caught up in the encore adventures of Moana. I stumbled upon "Hidden Figures," the story of the African American women at NASA who helped launch John Glenn into space, reviving the nation's space program.

Dr. Arora

These women were true heroes and patriots – they lived in a man's world and a white world, and they still managed to overcome and lead when needed. Yet, their story was "hidden" from the public until years later when popularized into this screenplay. On the plane, I realized I needed a fresh take to start my women in medicine webinar for this month's American Medical Association Women in Medicine webinar. Instead of exploring the "leaky pipeline" that resulted in only one in five professors who are female, I wondered whether there were hidden figures – women leaders among us who we don't see.

Turns out I wasn't the only one who stumbled upon this. Harvard researcher Julie Silver, MD, raised the question about invisible women leaders when reviewing quotes in magazines like Modern Healthcare or Forbes. Moreover, her research demonstrates that, for many professional society awards, 0% are given to women! This is happening in specialties that had nearly even proportions of women and men in practice, such as dermatology and rehab medicine. Last month, I was dumbfounded when I saw a full-page New York Times ad of Top Surgeons by Castle Connolly featuring 16 surgeons, all male.

While Castle Connolly does name female top doctors and market ad opportunities to women and men, I learned that only men sign up for the ads. While this raises more questions, the optics remain problematic – women doctors are hidden. Regardless of the venue, we must do a better job profiling our female leaders. In addition, it is important to recognize that female leaders face well-documented and somewhat controversial challenges that require careful thought:

- *Stereotype threat:* Some of the original research on stereotype threat done in college students showed that, if women who are about to take a math test are told that the test will expose gender differences, such as men do better at math, women will perform worse AND men will do better. The threat of stereotypes is that women can internalize them and this may hamper their progress. The good news is that education on stereotype threat apparently helps.
- *Impostor syndrome:* Even highly successful people apparently suffer from impostor syndrome, the fear that they do not deserve their success, but it is much worse in women than in men. You are always trying to conquer the little voice in your head that tells you that you are not good enough. TH

Read the full post at hospitalleader.org.

ALSO ON THE HOSPITAL LEADER BLOG

POST: If I were you, I would not be bullish on long-term care by Brad Flansbaum, DO, MPH, MHM

POST: Da Vinci wuz here by Jordan Messler, MD, SFHM

POST: Making the implicit explicit by Leslie Flores, MHA, SFH

POST: Should we really focus on "patient-centered care"? by Tracy Cardin, ACNP-BC, SFHM

SNEAK PEEK

Journal of Hospital Medicine

Trends in troponin-only testing for AMI in academic teaching hospitals and the impact of Choosing Wisely®

By Micah T. Prochaska, MD, MS; Samuel F. Hohmann, PhD, MS-HSM; Matthew Modes, MD, MPH; and Vineet Arora, MD, MPP, MHM

BACKGROUND: Identifying hospitals that are both early and consistent adopters of high-value care can help shed light on the culture and practices at those institutions that are necessary to promote high-value care nationwide. The use of troponin testing to diagnose acute myocardial infarction (AMI), and not testing for myoglobin or creatine kinase-MB (CK-MB), is a high-value recommendation of the Choosing Wisely® campaign.

OBJECTIVE: To examine the variation in cardiac biomarker testing and the effect of the Choosing Wisely® troponin-only testing recommendation for the diagnosis of AMI.

DESIGN: A retrospective, observational study using administrative ordering data from Vizient's Clinical Database/Resource Manager.

SETTING: Ninety-one academic medical centers from the fourth quarter of 2013 through the third quarter of 2016.

PATIENTS: Hospitalized patients with a principal discharge diagnosis of AMI.

INTERVENTION: The Choosing Wisely® recommendation to order troponin-only testing to diagnose AMI was released during the first quarter of 2015.

RESULTS: In 19 hospitals, troponin-only testing was consistently ordered to diagnose AMI before the Choosing Wisely® recommendation and throughout the study period. In 34 hospitals, both troponin testing and myoglobin/CK-MB testing were ordered to diagnose AMI even after the Choosing Wisely® recommendation. In 26 hospitals with low rates of troponin-only testing before the Choosing Wisely® recommendation, the release of the recommendation was associated with a statistically significant increase in the rate of troponin-only testing to diagnose AMI.

CONCLUSION: In institutions with low rates of troponin-only testing prior to the Choosing Wisely® recommendation, the recommendation was associated with a significant increase in the rate of troponin-only testing. TH

ALSO IN JHM THIS MONTH

Hospital perceptions of Medicare's Sepsis Quality Reporting Initiative

AUTHORS: Ian J. Barbash, MD, MS; Kimberly J. Rak, PhD; Courtney C. Kuza, MPH; and Jeremy M. Kahn, MD, MS

Health literacy and hospital length of stay: An inpatient cohort study

AUTHORS: Ethan G. Jaffee, MD; Vineet Arora, MD, MAPP; Madeleine I. Matthiesen, MD; David O. Meltzer, MD, PhD, MHM; and Valerie G. Press, MD, FAAP, FACP, MPH

How exemplary teaching physicians interact with hospitalized patients

AUTHORS: Sanjay Saint, MD, MPH, FHM; Molly Harrod, PhD; Karen E. Fowler, MPH; and Nathan Houchens, MD, FACP, FHM

A randomized cohort controlled trial to compare intern sign-out training interventions

AUTHORS: Soo-Hoon Lee, PhD; Christopher Terndrup, MD; Phillip H. Phan, PhD; Sandra E. Zaeh, MD; Kwame Atsina, MD; Nicole Minkove, MD; Alexander Billioux, MD; DPhil, Souvik Chatterjee, MD; Idoreyin Montague, MD; Bennett Clark, MD; Andrew Hughes, MD; and Sanjay V. Desai, MD

QI ENTHUSIAST TO QI LEADER:

Sheri Chernetsky Tejedor, MD

Research, informatics, and patient care intersect

By Eli Zimmerman
Frontline Medical News

Armed with a background in engineering, Sheri Chernetsky Tejedor, MD, SFHM, had already adopted a mindset of system reliability and design improvement when she began her journey in hospital medicine at Johns Hopkins University in Baltimore.

After completing her studies there, Dr. Tejedor was quick to find a place at Emory Healthcare in Atlanta and began working toward a future in health care quality improvement (QI).

"I gravitated early on toward what was essentially quality improvement work," Dr. Tejedor told *The Hospitalist*.

Dr. Tejedor worked with two mentors at a community hospital associated with Emory University who helped influence her success in QI: Mark V. Williams, MD, FACP, MHM, who is now the director of the Center for Health Services Research at the University of Kentucky in Lexington, and Jason Stein, MD, SFHM, who is currently a hospitalist at Emory University Hospital.

"They wanted to develop quality improvement expertise and get some of us trained," she said. "These advocates, or mentors, were critical for me. They are people who went above and beyond to help with career planning and thinking through possibilities."

Dr. Tejedor and Dr. Stein traveled to Intermountain Healthcare, a not-for-profit health system based in Salt Lake City that focuses on medical innovation, to participate in a rigorous quality training program.

"It was extremely intense," said Dr. Tejedor. "You worked over several months to get a certificate from the Institute for Healthcare Delivery Research, and it's all focused on quality improvement methodology."

After completing this program, Dr. Tejedor continued on her quality improvement path by focusing on research while also simultaneously working part time and taking care of her three young children. During this phase of her career, Dr. Tejedor and her colleagues published a study on idle central venous catheters, which became a primary reference for part of the ABIM Foundation's Choosing Wisely® campaign.

Dr. Tejedor said that, in addition to research, she explored different leadership roles, such as taking charge of central line teams and nurses working on device insertion practices. Her successful projects drew notice, and soon Dr. Tejedor and Dr. Stein helped to implement a stronger focus on quality improvement at their organization.

"Our health system was very entrenched in that QI culture," Dr. Tejedor said. "After Jason and I went to Intermountain, many of the Emory Healthcare leadership also got trained in Utah, and we ultimately built a quality course at Emory that mirrored it."

Dr. Tejedor's research evolved to intersect with clinical informatics. She leveraged the organization's electronic medical record to test her work.

"[The EMR] is ubiquitous, and that was a good way to reach staff, test interventions, and get data," Dr. Tejedor said. "I built a lot of tools that were helpful for the health system."

One of these tools was a device to monitor central line infections that was linked with clinical informatics as part of a large grant project. This led to another leadership opportunity: She assumed the role of chief research information officer and director for analytics at Emory Healthcare in 2013.

In 2014, Dr. Tejedor began working with the Centers for Disease Control and Prevention as the first hospitalist and informatics specialist on the Healthcare Infection Control Practices Advisory Committee, where she continues to hold a position. She is also a medical adviser for the CDC's Division of Healthcare Quality Promotion, focusing on electronic quality measures.

For those hospitalists pursuing QI, exposure to formal training is essential, Dr. Tejedor said. That may not mean flying to Utah, she noted, but garnering a deeper understanding of informatics is crucial.

When it comes to leadership, Dr. Tejedor recommends that those looking to take charge develop social skills and embrace parts of medicine that may be unfamiliar yet essential.

"Learn a little bit about the business side, which you may not know much about as a doctor taking care of patients," she said. "Learn just enough to understand what goes into people's decision making when they are choosing what projects get approved."

Trained as an engineer, Dr. Sheri Chernetsky Tejedor says knowledge of informatics and the business of medicine is key to institutional quality improvement.

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Dr. Tejedor encourages hospitalists to focus on developing relationships because that was one of the keys to her success as a quality improvement leader.

"It's about gaining the trust of the staff, mutual respect, working with the nurses, and getting to know the leadership and the people who make the financial decisions," she said. "Even if you have the money for a quality improvement project, it will fail if you don't work with the various teams to understand their needs and how to make it work for them."

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10 Warning signs of CGD

Chronic granulomatous disease (CGD): A Primary Immunodeficiency Disease Characterized by Serious Infections and Hospitalizations

CGD impairs the body's ability to kill certain bacteria and fungi; people with CGD are at a higher risk for severe, unusual, and repeat infections associated with hospitalizations[1]

CGD may become apparent at any time from infancy to late adulthood; however, most affected individuals are diagnosed before age 5[1]

Serious infections in patients with CGD are often associated with hospitalizations and the use of intravenous antibiotics[1]

Recognizing the 10 Warning Signs of CGD Can Lead to a Diagnosis[1,2]	
1.	Serious, unusual, and repeat infections in many areas of the body, including the lungs, liver, and bones
2.	Skin and soft tissue abscesses that don't go away
3.	Diarrhea or abdominal pain
4.	Pain or difficulty eating or going to the bathroom
5.	Vomiting after meals
6.	Swollen lymph nodes
7.	Fever, cough, fatigue, or bone/joint pain
8.	Failure to thrive
9.	Granulomas, which usually appear in the bladder and intestines
10.	Family members or relatives who have had unusual or serious infections that have resulted in hospitalizations or even death

CGD is most commonly diagnosed by using a laboratory test called a dihydrorhodamine (DHR) test[3]

To learn more about CGD or to request a test kit, visit CGDPathways.com

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Pathogens and the Infections They Commonly Cause[1,4-6,a]

Bacterial	Fungal
Staphylococcus aureus Soft tissue infections, lymphadenitis, liver abscess, perirectal abscess, osteomyelitis, pneumonia, sepsis	***Aspergillus* species** Pneumonia, lymphadenitis, osteomyelitis, brain abscess, skin lesions, meningitis
Burkholderia (pseudomonas) cepacia complex Pneumonia, sepsis	***Candida* species** Sepsis, soft tissue infection, liver abscess, mucocutaneous *candida* infections, lymphadenitis
Serratia marcescens Osteomyelitis, soft tissue infections, pneumonia, sepsis	
***Nocardia* species** Pneumonia, osteomyelitis, brain abscess	
***Klebsiella* species** Pneumonia, skin infections, lymphadenitis	

[a]This is not a complete list of pathogens. Infections may also be caused by other species of bacteria and fungi not listed here.

How Can Hospitalists Recognize and Help Patients With CGD?

Suspect CGD in a patient with frequent, repeat infections; unusually severe infections; infections from a specific group of pathogens[1]	Utilize combination immunomodulatory and prophylactic therapy for the management of CGD[7,8]
Recommend DHR testing for at-risk patients[3]	Collaborate with a multidisciplinary care team—including immunologists, hematologists-oncologists, gastroenterologists, and infectious diseases specialists—for the ongoing management of CGD and its potential complications[9]

References

1. Leiding JW, Holland SM. Chronic granulomatous disease. In: Pagon RA, Adam MP, Ardinger HH, et al, eds. *GeneReviews*. Seattle, WA: University of Washington, Seattle;1993-2017.
2. Chronic granulomatous disorder: a guide for medical professionals. CGD Society website. http://www.cgdsociety.org/static/media/up/CGDS_Medical_Guide.pdf. Published August 2012. Accessed October 22, 2017.
3. Hill HR, Augustine NH, Pryor RJ, et al. Rapid genetic analysis of X-linked chronic granulomatous disease by high-resolution melting. *J Molar Diagn*. 2010;12(3):368-376.
4. Bortoletto P, Lyman K, Camacho A, Fricchione M, Khanolkar A, Katz BZ. Chronic granulomatous disease: a large, single-center US experience. *Pediatr Infect Dis J*. 2015;34(10):1110-1114.
5. Song E, Jaishankar GB, Saleh H, Jithpratuck W, Sahni R, Krishnaswamy G. Chronic granulomatous disease: a review of the infectious and inflammatory complications. *Clin Mol Allergy*. 2011;9(1):10.
6. Okada S, Puel A, Casanova J-L, Kobayashi M. Chronic mucocutaneous candidiasis disease associated with inborn errors of IL-17 immunity. *Clin Transl Immunol*. 2016;5(12):e114.
7. Bonilla FA, Khan DA, Ballas ZK, et al. Practice parameter for the diagnosis and management of primary immunodeficiency. *J Allergy Clin Immunol*. 2015;136(5):1186-1205.
8. Immune Deficiency Foundation. *Diagnostic & Clinical Care Guidelines for Primary Immunodeficiency Diseases*. 3rd ed. Towson, MD: Immune Deficiency Foundation; 2015.
9. Thomsen IP, Smith MA, Holland SM, Creech CB. A comprehensive approach to the management of children and adults with chronic granulomatous disease. *J Allergy Clin Immunol Pract*. 2016;4(6):1082-1088.

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HORIZON PHARMA

10/17 DA-ACT-00040

Homelessness: Whose job is it?

We need better ways of addressing vulnerability among homeless patients

By Sarah A. Stella, MD, FHM

Despite programs to end homelessness, it remains a substantial and growing problem in many cities in the United States.[1,2] In 2016, there were an estimated 10,550 homeless people living in my home state of Colorado, a 6% increase from the prior year.[2] A recent point-estimate study found that there were more than 5,000 homeless individuals in the Denver metropolitan area on a single night in January 2017.[3] Because of the relative scarcity of housing, a growing number of cities like Denver now utilize a practice known as vulnerability indexing to prioritize homeless persons at high risk of mortality from medical conditions for placement in permanent supportive housing.[4]

What can hospitalists do to improve the care of homeless patients?

Ask: Ask questions to better understand patients' housing status and needs.
Learn: Educate yourself on the full range of respite, housing, and other support services available to homeless patients in your community.
Advocate: Get involved in community organizations that advocate for policies benefiting those affected by homelessness.
Lead: Spearhead collaborative research and other partnerships aimed at improving hospital care and care transitions for vulnerable homeless persons.

Homelessness is associated with myriad adverse health consequences, including a high burden of acute and chronic diseases, high rates of mental illness and substance use, increased utilization of emergency and hospital services, decreased utilization of primary care, and an increased risk of death.[4-8] Homeless adults who are hospitalized represent a particularly vulnerable group affected disproportionately by morbidity and mortality.[9,10] In fact, previous research indicates that almost half of adult super-utilizers – patients who accumulate multiple emergency department visits and hospital admissions – are homeless.[11] In addition to homelessness, this group is characterized by high rates of multiple chronic health conditions and mental health and substance use disorders.

Although hospitalists like myself frequently care for vulnerable homeless patients in the hospital, most have little formal training in how best to care for and advocate for these individuals beyond treating their acute medical need, and little direct contact with community organizations with expertise in doing so. Instead, we have learned informally through experience. Hospital providers are often frustrated by the perceived lack of services and support available to these patients, and there is substantial variability in the extent to which providers engage patients and community partners during and after hospitalization. Despite the growing practice of vulnerability indexing in the community, hospital-based providers do not routinely assess vulnerability with respect to housing. Previous research indicates that housing status is assessed in only a minority of homeless patients during their hospital stay.[12] Thus, hospitalization often represents a missed opportunity to identify vulnerability and utilize it to connect patients with housing and other resources.

Despite the development of best practices and ongoing research on interventions to improve care transitions in various groups, there is limited research specifically focused on understanding the unique needs, perspectives and preferences of homeless individuals with respect to hospital discharge. Homeless patients often face significant obstacles on discharge, including lack of safe housing and respite options, lack of transportation, and lack of social support.[13] Lack of integration between hospitals and community organizations further exacerbates these problems.

Addressing the significant known health disparities faced by homeless persons is one of the greatest health equity challenges of our time.[14] We need better ways of understanding, identifying, and addressing vulnerability among homeless patients who are hospitalized, paired with improved integration with local community organizations. This will require moving beyond the idea that homelessness is the social worker's job to one of shared responsibility and advocacy.

Collaborative research and other partnerships that engage both community organizations and individuals affected by homelessness are crucial to further understand the specific needs, barriers, challenges, and opportunities for improving hospital care and care transitions in this population. As well-respected community members and systems thinkers who witness these inequities on a daily basis, hospitalists are well positioned to help lead this work. TH

Dr. Stella is a hospitalist at Denver Health and Hospital Authority, and an associate professor of medicine at the University of Colorado. She is a member of The Hospitalist editorial advisory board.

References

1. Ending Chronic Homelessness. (Aug 2017). U.S. Interagency Council on Homelessness. Available at https://www.usich.gov/goals/chronicsness. Accessed Oct 21, 2017.
2. 2016 Annual Homeless Assessment Report (AHAR) to Congress. (Nov 2016). U.S. Department of Housing and Urban Development Office of Community Planning and Development, Part 1. Available at https://www.hudexchange.info/resources/documents/2016-AHAR-Part-1.pdf. Accessed Oct 21, 2017.
3. 2017 Point-In-Time Report, Seven-County Metro Denver Region. Metro Denver Homeless Initiative. Available at http://www.mdhi.org/2017_pit. Accessed Oct 22, 2017.
4. Henwood BF et al. Examining mortality among formerly homeless adults enrolled in Housing First: An observational study. BMC Public Health. 2015;15:1209.
5. Weinstein LC et al. Moving from street to home: Health status of entrants to a Housing First program. J Prim Care Community Health. 2011;2:11-5.
6. Kushel MB et al. Factors associated with the health care utilization of homeless persons. JAMA. 2001;285(2):200-6.
7. Kushel MB et al. Emergency department use among the homeless and marginally housed: Results from a community-based study. Am J Public Health. 2002;92(5):778-84.
8. Baggett TP et al. Mortality among homeless adults in Boston: Shifts in causes of death over a 15-year period. JAMA Intern Med. 2013 Feb 11;173(3):189-95.
9. Johnson et al. For many patients who use large amounts of health care services, the need is intense yet temporary. Health Aff (Millwood). 2015 Aug;34(8):1312-9.
10. Durfee J et al. The impact of tailored intervention services on charges and mortality for adult super-utilizers. Healthc (Amst). 2017 Aug 25. pii: S2213-0764(17)30057-X. doi: 10.1016/j.hjdsi.2017.08.004. [Epub ahead of print].
11. Rinehart DJ et al. Identifying subgroups of adult super utilizers in an urban safety-net system using latent class analysis: Implications for clinical practice. Med Care. 2016 Sep 14. doi: 10.1097/MLR.0000000000000628. [Epub ahead of print].
12. Greysen RS et al. Understanding transitions of care from hospital to homeless shelter: A mixed-methods, community-based participatory approach. J Gen Intern Med. 2012;27(11):1484-91.
13. National Health Care for the Homeless Council. (Oct 2012). Improving Care Transitions for People Experiencing Homelessness. (Lead author: Sabrina Edgington, policy and program specialist.) Available at www.nhchc.org/wp-content/uploads/2012/12/Policy_Brief_Care_Transitions.pdf. Accessed Oct 21, 2017.
14. Koh HK et al. Improving healthcare for homeless people. JAMA. 2016;316(24):2586-7.

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Medical consultation is an important

Q&A

A love of teaching: James Kim, MD

Dr. Kim joins *The Hospitalist* editorial advisory board

By Eli Zimmerman
Frontline Medical News

While James Kim, MD, did not originally begin medical school with a plan to become a hospitalist, he has embraced his current role wholeheartedly.

Since becoming board certified in both internal medicine and infectious diseases, Dr. Kim has welcomed the opportunity to be part of hospital medicine, which enables him to pursue his other passion: teaching and mentoring.

As an assistant professor of medicine at Emory University in Atlanta, Dr. Kim has tried to emulate his own mentors by not simply distributing factual information to students but also teaching ways of thinking.

"It's not just what you know but how you convey what you know to other people," said Dr. Kim. "While you might get useful information from a didactic teaching style, it's important to ask questions to encourage the learner to think about not only what the right answer is but also what's the thought process required to get the answer."

As one of the newest additions to the editorial advisory board of *The Hospitalist*, Dr. Kim took time to tell us more about himself in a recent interview.

QUESTION: How did you find your career path in medicine?
ANSWER: I originally went into medical school thinking I was going to do pediatrics, but then I realized that I really enjoy talking to people and that I like the process of thinking through diagnoses, managing patients, and learning about what makes their circumstances unique.

Q: How did you get into hospital medicine?
A: When I finished my internal medicine residency, I thought I was going to do medical missions. However, I realized along the way that the care you need to provide in order to really make a difference in other countries requires a constant presence there – not just a week or two. So after my fellowship, I was searching for jobs and found a hospitalist position at the University of California, Los Angeles. When I saw it, I thought "Wow, I really miss doing inpatient medicine."

Q: Since you started, what have been some of your favorite parts of hospital medicine?
A: When people come to you in the hospital setting, they are usually pretty sick. It is very satisfying when, through the course of a person's hospital stay, we are able to come up with a plan that can get them acutely better.

Q: What do you think is the hardest part of hospital medicine?
A: I think one of the things that is most frustrating is when we are placed into a situation in which we are not necessarily doing medical work for a patient but are doing something more like social work. For instance, there are cases in which patients cannot be on their own in the community, and there's no family to take them in, so the hospital, on behalf of the state, has to take them in.

Q: What else do you do outside of hospitalist work?
A: Since I've finished medical school, I've always been in some kind of academia, which is not something I would have expected. But as time has gone by, I have really come to appreciate being in academia. I really enjoy teaching, and I also think that an academic institution kind of keeps me on my toes. I'm involved with interprofessional education at Emory, with teaching medical students, interns, and residents when I'm on teaching service, and obviously now I'm on *The Hospitalist* editorial board. I'm looking forward to keeping abreast of what's hot in the world of hospital medicine.

Q: What are you excited about bringing to *The Hospitalist* editorial board?
A: I want to try to contribute ideas. I feel that, even in my short time at Emory, I've gotten to know a few people who might be good resources for reporters to interview or even who might write articles themselves. I also think that seeing what is trending in the world of hospital medicine is a nice way of understanding the future direction of hospital medicine.

Q: What have you seen as being the biggest change in hospital medicine since you started?
A: I feel as though I've kept my head down and plowed forward through the first part of my career, but I think that, more than anything else, what I've noticed is bigger shifts within health care itself. I know that there's a lot of consolidation going on. I think that there are many questions that are going to come up about how do we manage a health care system as complicated as America's and how do we deliver optimal care to people especially when sometimes we end up in situations in which we don't have all the resources that we would want to have because of circumstances.

Q: Do you see anything in particular on the horizon for hospital medicine?
A: I've noticed that there's been more "hospitalist-ization" – if that's even a term – of other medical services. At our institution, we already have an acute care service that is basically hospital medicine for general surgery. I think another thing that's been kind of a hot topic recently is a point-of-care testing, including ultrasounds for line placements.

Q: Where do you see yourself in 10 years?
A: I really enjoy my work at Emory. I want to find more opportunities to teach. For example, I've already gotten involved in teaching physician assistant students about how to perform interviews and deliver presentations for attendings. A lot of serendipitous things have happened to me over time, so I think I will continue to teach, but I'm open to those opportunities that present themselves in the future.

Q: What's the best book you've read recently and why?
A: "The Hero with a Thousand Faces," by Joseph Campbell. This is a very well-known book – I think George Lucas made reference to it when he was writing Star Wars – but I think it was a great literary way to examine the hero's journey. Once you read the book, and you then watch any kind of movie or read any other kind of adventure narrative, you can't miss the pattern.

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>
> —*James Kim, MD*

NEWS & NOTES

clinical component for most hospitalists. Today, hospitalists also are asked to provide both "curbside" advice and more comprehensive comanagement of medical problems. Hospitalists who are effective consultants communicate skillfully and act professionally. The *Role of the Medical Consultant* module describes the different roles that hospitalists can perform as medical consultants and provides strategies for improving communications and referring physician satisfaction.

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Mr. Radler is marketing communications manager at the Society of Hospital Medicine.

Hospitals will feel the squeeze of DSH payment changes

Rule could mean loss of quality physicians, services

By Kelly April Tyrrell

"Inner city, safety-net hospitals are always fighting for a piece of the pie. Their payer mix is more favorable, yet they game the system for these funds."

–Bradley Flansbaum, DO, MPH, MHM

"I think the reason it's contentious is because, when you're dealing with a fixed dollar amount and you're talking about redistributing dollars, someone is going to lose."

–John McHugh, PhD

Earlier this year, the Centers for Medicare & Medicaid Services finalized fundamental changes to how it reimburses hospitals for uncompensated care costs. When first proposed, the move raised alarm among physicians, hospitals, health systems, state health departments, and others around the country, and even prompted a lawsuit in New Hampshire.

In the months since the official adoption by the CMS, it remains unclear how the change will affect hospitals around the country, particularly the safety-net hospitals that rely on these payments most.

The rule alters the formula previously used to determine Disproportionate Share Hospital (DSH) payments, meant to fill in the gap for those hospitals treating large numbers of Medicaid and uninsured patients. The change is a reinterpretation of regulations that the CMS says have been codified but unenforced since the Omnibus Budget Reconciliation Act of 1993, that say the agency will reimburse DSH-qualified hospitals for the uncompensated costs they incur providing care (inpatient and outpatient) to Medicaid-eligible and uninsured patients. The agency argues that payments made on behalf of these same patients by Medicare, the patients themselves, and other third-party party payers should be considered revenue and not contribute to individual hospitals' DSH limits. Previously, the CMS primarily based payments on the number of Medicaid and uninsured patients any given hospital treated.[1]

In its final rule issued in April 2017 and finalized on Aug. 2, 2017, the federal agency said the intent of the change is to more fairly distribute a fixed amount of DSH funds to the hospitals most in need. It also argued the change is a more consistent interpretation of the existing statute [Section 1923(g)], provides clarification around language that has been the subject of inquiry over the last decade, and promotes what it calls "fiscal integrity."

"These allotments essentially establish a finite pool of available federal DSH funds that states use to pay the federal portion of payments to all qualifying hospitals in each state," the final rule reads. "As states often use most or all of their federal DSH allotment, in practice, if one hospital gets more DSH funding, other DSH-eligible hospitals in the state may get less."

This is not, however, the way all parties see it. For instance, in a comment submitted to the CMS in September 2016, the National Association of Urban Hospitals expressed its concern that DSH payments already are inadequate to cover the financial burden associated with providing care in low-income communities, such as translation services and the costs of employing physicians to practice in more challenged settings.[2]

In a letter to the CMS, the Minnesota Department of Human Services said it agrees with the agency that DSH payments should not be used to "subsidize costs that have been paid by Medicare and other insurers" but disagrees with the agency's approach. Its argument includes a challenge to the CMS's statutory authority to change the formula based on existing language.[3]

"I think the reason it's contentious is because, when you're dealing with a fixed dollar amount and you're talking about redistributing dollars, someone is going to lose," said John McHugh, PhD, professor of health management at the Mailman School of Public Health at Columbia University, New York. "A facility receiving DSH payments is already dealing with high levels of uncompensated care; the hospitals are operating on very thin margins. They are very often getting by because of these payments."

Despite the CMS's seemingly good intentions, Bradley Flansbaum, DO, MPH, MHM, a hospitalist at Geisinger Health System and member of the SHM Public Policy Committee, remains skeptical that the hospitals that need and deserve DSH payments will actually see more redistributed in their favor.

"Inner city, safety-net hospitals are always fighting for a piece of the pie," he said, noting that a percentage of larger health systems and midsized hospitals also take advantage of DSH payments. "Their payer mix is more favorable, yet they game the system for these funds," Dr. Flansbaum added.

If hospitals in need see fewer DSH dollars, Dr. McHugh noted, they will feel the squeeze.

"It's not easy to operate safety-net hospitals," he said. "And on top of that, hospitals have been operating under a certain assumption and it's changing, and it takes time to incorporate those changes. There will probably be some fallout for the first couple of years as hospitals are adapting their practices. It could mean loss of services. It could mean the loss of quality physicians and quality staffing, and that can impact patient care."

How will hospitals adapt?

The CMS did not give hospitals transition time. The reinterpretation became effective in June 2017, just 60 days after the agency issued the final rule. Dr. McHugh said he is not sure why the agency did not build in time for hospitals to adapt, particularly given the uncertainty around the national uninsured rate going forward, with so many potential changes to the American health care system under a new administration.

How any of these changes trickle down to hospitalists remains to be seen, said Dr. Flansbaum. Dr. McHugh believes it could lead to increased patient loads, higher turnover and churn, and fewer experienced physicians in safety-net hospitals as younger doctors are hired and burn out. "At the end of the day, that feeds into patient care and patient satisfaction and quality," he said.

However, hospitals across the country have been living with this "slow burn" for a long time, said Dr. Flansbaum, though not necessarily due to inadequate DSH payments. At least in some areas, reimbursements have gone down, hospital occupancy rates have declined, rural hospitals have closed, hospitals have consolidated, and people have been laid off.

It's important to ensure the hospitals providing care for high levels of uninsured or underinsured patients receive the help they need, he said, and it's also important to examine the role hospitals play as a whole in the American health care system.

"It's an expensive system," he said. "We have created a system where, unlike other countries that have developed more vigorous primary or outpatient care, we have created an inpatient health system."

With the CMS's change, the government is the only entity that seems to win across the board, Dr. McHugh said. He said he would not be surprised if analysts looked to see how hospitals were affected by it in coming months.

But, he remains optimistic. In fact, the final rule also came with an $800 million increase in the amount of uncompensated care payments for acute care hospitals in fiscal year 2018, the CMS says.[4]

"Hospitals are adaptable," Dr. McHugh said. "I think what you'll see is this will spur some innovation in terms of patient care maybe a few years down the road. It may hit some stumbling blocks in the early going but there may be some positive changes in the future." TH

References

1. Medicaid Program; Disproportionate Share Hospital Payments –Treatment of Third Party Payers in Calculating Uncompensated Care Costs. Centers for Medicare & Medicaid Services final rule. Citation 82 FR 16114. Published April 3, 2017. Last accessed Aug 14, 2017. https://www.federalregister.gov/documents/2017/04/03/2017-06538/medicaid-program-disproportionate-share-hospital-payments-treatment-of-third-party-payers-in.

2. Kugler E. 2016-09-14 NAUH Medicaid Program DSH Payments – Treatment of Third Party Payer in Calculating Uncompensated Care Costs. Sep 14, 2016. Last accessed Aug 14, 2017. https://www.regulations.gov/document?D=CMS-2016-0144-0020.

3. Berg A. Proposed Rule on Disproportionate Share Hospital Payments – Treatment of Third Party Payers in Calculating Uncompensated Care Costs, CMS-2399-P. Sep 14, 2016. Last accessed Aug 14, 2017. https://www.regulations.gov/document?D=CMS-2016-0144-0046.

4. CMS finalizes 2018 payment and policy updates for Medicare hospital admissions. Published Aug 2, 2017. Last accessed Aug 14, 2017. https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2017-Press-releases-items/2017-08-02.html.

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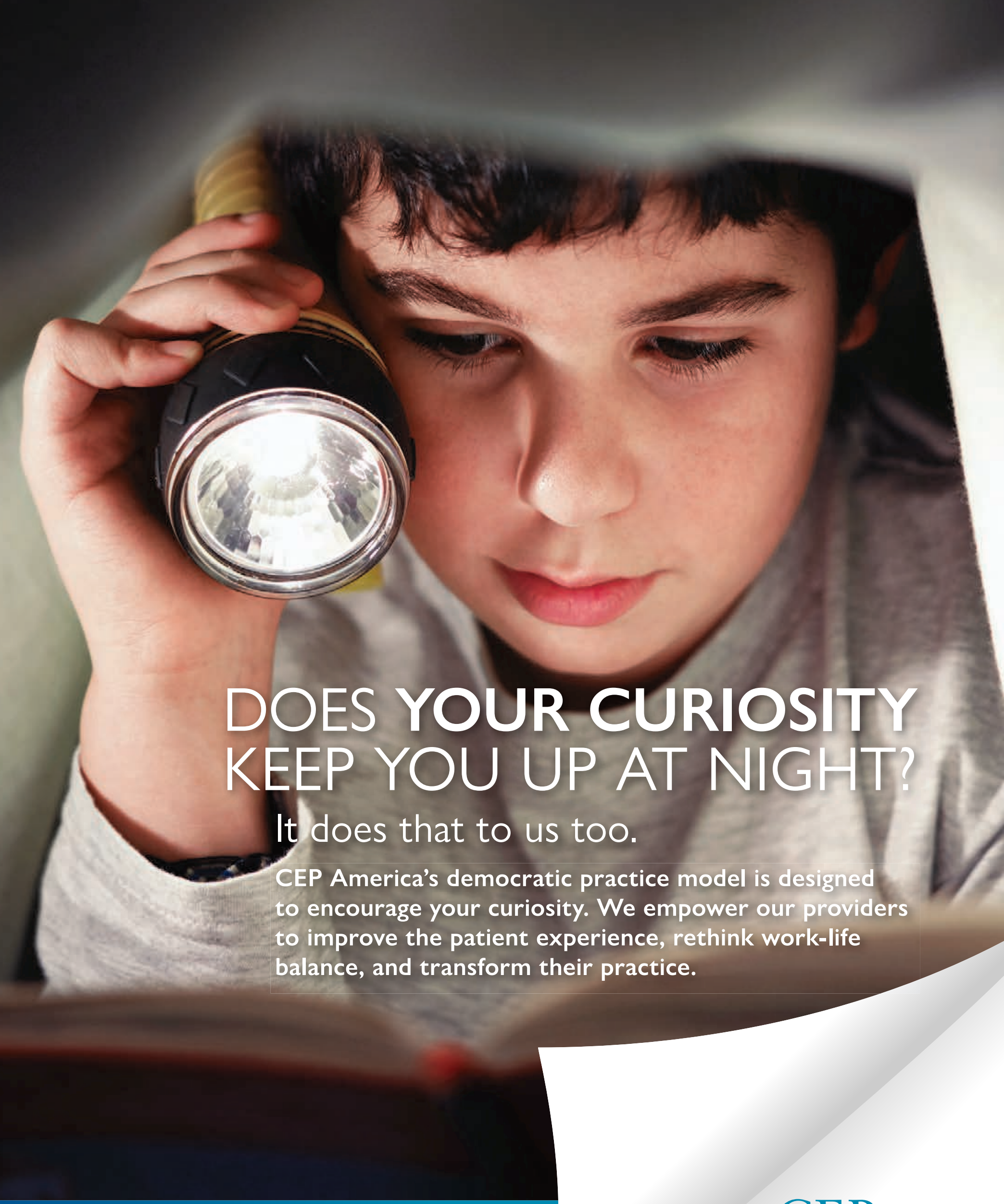

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Using post-acute and long-term care quality report cards

Discharge planning decisions fall heavily on patients, families, caregivers

Dr. Harrington is professor of sociology and nursing; Dr. Ross is a research specialist and principal investigator of the Calqualitycare.org website project; and Dr. Newman is a professor at the Institute for Health and Aging, all at the University of California, San Francisco.

By Charlene Harrington, PhD, RN; Leslie Ross, PhD; and Jeffrey Newman, MD, MPH

The challenges of hospital discharge planning are well known and yet have not been adequately addressed by hospitalists and discharge teams. As the complexity of patient care needs has grown, so has the difficulty in developing appropriate discharge goals for post-acute and long-term care (LTC), choosing the appropriate setting(s), and selecting appropriate providers. Post-acute and LTC needs may include rehabilitation, nursing care, home health, supportive services, and/or palliative care[1] in an institutional setting or at home from a wide array of providers with varying levels of quality.

Even though 52% of U.S. hospitals received penalties for having higher-than-expected readmissions between 2013 and 2017,[2] inadequate discharge planning for post-acute and LTC continues to contribute to high rates of all-cause 30-day rehospitalization. The discharge process sometimes is deficient in discussion of goals; assessment of discharge needs; appropriate choice of discharge locations; and the provision of additional or different home services.[3] Discharge decisions are complicated by the stressful circumstances of hospitalization and discharge deadlines.

A number of intervention studies have been implemented to improve the discharge planning process including Project RED (Reengineered Discharge) and Project Boost (Better Outcomes for Older Adults Through Safe Transitions).[4,5] These multifaceted interventions, both pre- and post-discharge, include institutional self-assessment, team development, stakeholder support, and process mapping. Other policies, practices, and programs have been developed to facilitate transitions after hospitalization,[6-8] but they have not focused on the use of currently available post-acute and LTC quality report cards that can augment these interventions.

Hospital discharge planning decisions fall heavily on patients, families, and caregivers, often with inadequate information about choices and options. More than 30 states have passed the Caregiver Advise, Record, and Enable (CARE) Act into law to require hospitals to provide resources for family caregiver education and instruction,[7] but hospitals do not have to provide information on all LTC options and provider quality ratings.

Quality report cards about LTC providers – a major innovation for consumer education and choice – are often not used in the discharge process for a number of reasons. A significant concern is that using report cards will extend the length of stay. Rather than extending the decision-making time and the length of stay, the use of report cards can reduce length of stay.[9] A focus on identifying the first available nursing home bed or LTC provider often ignores the need to identify the most appropriate high-quality providers.

Although individuals on Medicaid and/or with complex medical conditions may have fewer discharge options than other patients, the majority of nursing home providers have low occupancy rates and will accept residents from any payer. Other home- and community-based providers generally have a flexible capacity for serving individuals.

Hospitals and health plans often have established networks of post-acute and LTC providers and these networks must be taken into account in the discharge process. Most hospital and health plan networks have providers with a wide range of ratings, allowing for choices within networks.

The Centers for Medicare & Medicaid Services established a web-based nursing home report card called Nursing Home Compare in 1998 that includes information on facility characteristics, deficiencies, staffing information (since 2000), and resident quality indicators (since 2002). In 2008, the website added a "five-star" rating system for all U.S. nursing homes and all-cause 30-day readmission rates and successful discharge rates from nursing homes were incorporated into the ratings in 2016.

CMS also established a web-based home health website, which provides quality ratings. This website has general information, quality measures, and patient surveys with information on readmission rates from home health agency services.

Some states have developed their own information on LTC providers. In California, an integrated single-portal LTC consumer information website is available that includes all licensed LTC providers (about 20,000) including nursing homes, home health, hospice, residential care, and day care (www.Calqualitycare.org). This model website uses public information from federal and state sources on deficiencies, complaints, staff and providers, services, quality measures, provider characteristics, and costs. Ratings, similar to the CMS ratings but with more comprehensive state information, are provided.

After establishment of the CMS Nursing Home Compare rating system in 2008, nursing homes improved their scores on certain quality measures and consumer demand significantly increased for the best (five-star) facilities and decreased for one-star facilities.[10] More recently, a clinical trial of the use of a personalized version of Nursing Home Compare in the hospital discharge planning process found greater patient satisfaction, patients being more likely to go to higher ranked nursing homes, patients traveling further to nursing homes, and patients having shorter hospital stays, compared with the control group.[9]

Quality report cards show wide variations within and across states ranging from one star (poorest quality) to five stars (highest quality). More than one-third of nursing homes had relatively low overall star ratings (one or two stars) serving 39% of residents in 2015.[11] Federal nursing home regulatory violations range from 0 to more than 40 deficiencies (average of 7) with a scope and severity ranging from minor to widespread harm or jeopardy (including deaths).[12] Total nurse staffing hours (average, 4.1 hours per resident-day) range from less than 3 hours to more than 5.5 hours per resident-day and RN hours are 3.5 times higher in some nursing homes than in the lowest staffed homes.[13] Hospital readmission rates for short-stay residents from nursing homes also vary widely (4%-52%; average, 21%).[1,12]

Hospitalists and discharge planners should inform patients, families, and caregivers about the federal and state LTC quality report cards, provide education and choices, and engage and assist them in the decision-making process. Hospitals, health plans, and accountable care organizations also need to be more informed about the availability of and benefits of using quality report cards for developing post-acute and LTC provider networks. The use of high-quality LTC network providers should be able to reduce hospital length of stay and hospital readmission rates, and improve patient and caregiver satisfaction. TH

References

1. Mor V et al. The revolving door of rehospitalization from skilled nursing facilities. Health Aff (Millwood). 2010;29(1):57-64.

2. Thompson, MP, Waters, TM, Kaplan et al. Most hospitals received annual penalties for excess readmissions, but some fared better than others. Health Aff (Millwood). 36(5):893-901.

3. Auerbach AD et al. Preventability and causes of readmissions in a national cohort of general medicine patients. JAMA Intern Med. 2016;176(4):484-93.

4. Jack B et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. Ann Intern Med. 2009;150(3):178-87.

5. Hansen LO et al. Project BOOST: effectiveness of a multihospital effort to reduce rehospitalization. J Hosp Med. 2013;8(8)421-7.

6. Naylor MD et al. The care span: The importance of transitional care in achieving health reform. Health Aff (Millwood). 2011;30(4):746-54.

7. Coleman EA. Family caregivers as partners in care transitions: The caregiver advise record and enable act. J Hosp Med. 2016 Dec;11(12):883-5.

8. Leppin AL et al. Preventing 30-day hospital readmissions: a systematic review and meta-analysis of randomized trials. JAMA Internal Med. 2014;174(7):1095-107.

9. Mukamel DB et al. Personalizing nursing home compare and the discharge from hospitals to nursing homes. Health Serv Res. 2016;1(6):2076-94.

10. Werner RM et al. Changes in consumer demand following public reporting of summary quality ratings: An evaluation in nursing homes. Health Serv Res. 2016;51 Suppl 2:1291-309.

11. Boccuti C et al. Reading the stars: nursing home quality star ratings, nationally and by state. Kaiser Family Foundation Issue Brief. May 2015.

12. Centers for Medicare & Medicaid Services. Nursing home compare data archives. May 2017 monthly files. Quality MSR Claims data. https://data.medicare.gov/data/archives/nursing-home-compare. Accessed July 15, 2017.

13. Harrington C et al. The need for higher minimum staffing standards in U.S. nursing homes. Health Serv Insights. 2016;9:13-9.

Phoenix Children's Hospital integrates care from ground up

When good care is being given, everyone benefits financially

By Thomas R. Collins

About 4 years ago, officials at Phoenix Children's Hospital stopped and took a look around. The adult health care landscape was zooming toward value-based models and integrating care so that previously separate components were now working together. The health of whole populations mattered more than ever.

But their hospital, they found, accounted for just 9% of the "care touches" – interactions between a patient and a doctor – of their half-million pediatric population. They were not working closely with primary care doctors and independent specialists. Patients come to the hospital, they get treated, and then – poof, they are gone. The hospital came to a realization that there was a better way to provide care.

"We can't keep doing this alone and saying, 'We're going to impact the overall wellness of our patients just by being a hospital,'" said Chad Johnson, senior vice president of Phoenix Children's Care Network.

They began a process that led to what appears to be a "first-of-its-kind" model, an integrated care network created from the ground up by a hospital venturing out into the community and recruiting private primary care doctors and specialists. Now, more than 1,000 physicians from more than 100 practices are part of the network, joined with the hospital through contracts laden with incentives. When good care is given, the network gets paid, and everyone benefits financially.


Mr. Johnson

"It's amazing the difference we're able to provide when we start linking together what used to be very disparate systems," Mr. Johnson said.

Here are some features of the network:

- Everyone, including the hospital, is now sharing their data. When a child shows up at the ED, the ED doctor can quickly see things like who the primary care doctor is, allergies, medications, and care history.
- Targets such as asthma control, providing basic wellness exams, and following patients appropriately, are tied to financial rewards.
- Children with complex or special health care needs, and patients who are high utilizers, have a care coordinator assigned to look more closely at their cases.
- A corporate entity created by the hospital and its community physician partners has a doctor-heavy board of directors.

Some of the care improvements have been dramatic, Mr. Johnson said. One teenager had made 55 ER visits and 21 inpatient visits over 9 months, but the pattern went unnoticed. With the new tools the problem became apparent. A care coordinator found that the mother didn't understand how to administer the boy's medication, prompting repeated medical crises and hundred of thousands of dollars in unnecessary costs. The teenager has since re-enrolled in school and has had no more hospital admissions, Mr. Johnson said.

He said that, at first, many community doctors had a "real skepticism" of being too closely tied to a hospital financially, but now doctors are reaching out to join the network.

"There's a leap of faith that has to happen in the initial stages," he said. "When you get the insurance companies at the table to really work with you to build the right incentives around truly impactful and quality care, you can really start to move the needle. When you see – with data – that what you're doing is having success, and they see the additional money coming from the incentives, that really helps."

Amy Knight, chief operating officer of the Washington-based Children's Hospital Association, said that, while other children's hospitals have migrated toward more integrated care, they either haven't needed to recruit community physicians as they have in Phoenix or market conditions have been such that they haven't expanded as quickly.

"Phoenix saw a huge opportunity and was very smart about how they approached their own market," she said. "They are definitely on the front end, the cutting edge of doing that."

Since its network has expanded, Phoenix Children's has hosted visitors who hope to draw lessons from their experience, she said.

"I think what most people go away with is: 'Very interesting, very cool – not sure it would work in our market,'" she said. Still, lessons on thinking about risk and building a governance structure are widely applicable, she said.

She expects a continued move toward integrated care networks, despite talk about repealing and replacing the Affordable Care Act.

"There's probably some people stepping back in hesitancy, but I don't think that the political discourse right now will necessarily change the trajectory that we're on." TH

Readmissions penalties

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Dr. Frizner | Dr. Boutwell | Dr. Harrington | Dr. Wilborn | Dr. Burke

relationships with post-acute facilities?

"As of now, the incentives or penalties haven't gotten to the level of the individual physician working in long-term care," said Benjamin Frizner, MD, FHM, director of quality and performance for CEP America, a national provider of emergency, hospital, and post-acute medicine. Thus, doctors' professional fees are not affected, he said.

Experts say SNFs – as with hospitals before them – lack the ability to allocate rewards or penalties for readmission rate performance to individual doctors. But increasingly close collaborative relationships between post-acute facilities and the hospitalists who work in post-acute care mean that the hospitalist has an important role in helping the SNF to manage its readmissions exposure.

"Hospitals and hospitalists want to keep good relationships with the SNFs they partner with, for a variety of reasons," Dr. Frizner said. "We believe that the best way to reduce readmissions and unplanned transfers from the SNF is for the doctor to know the patient. We need dedicated doctors in the facility. We want hospitalists who already know the patient to come to the facility and see the patient there."

The hospitalist's role in post-acute care

Hospitalists who work in post-acute care typically make scheduled, billable medical visits to patients in long-term care facilities, and may also take on roles such as facility medical director or contribute to quality improvement. Relationships may be initiated by a facility seeking more medical coverage, by a hospitalist group seeking additional work or an ability to impact on the post-acute care delivered to hospital patients discharged to the facility, or by health systems, health plans, or accountable care organizations seeking to better manage the quality of care transitions for their beneficiaries.

"The facility can ask the hospitalists to come in, or the hospitalist group can ask to come in. You have all of that – plus you've got big regional and national hospitalist companies that sign contracts with hospitals and with large SNFs," explained Amy Boutwell, MD, MPP, founder of the Massachusetts-based consulting group Collaborative Healthcare Strategies. "It's clearly becoming more common with current market pressures," she said.

"What I'm seeing is that, with opportunities for bundled payments, we all have new incentives for moving patients along and reducing waste," Dr. Boutwell said. "For hospitalists practicing in SNFs, it's going to be a much bigger phenomenon. They'll be called to reevaluate patients and make more visits than they have been accustomed to." She hopes SNFs are studying what happened with hospitals' readmission penalties, and will respond more quickly and effectively to their own penalty exposure.

Robert Harrington, Jr., MD, SFHM, a hospitalist in Alpharetta, Ga., and chief medical officer at Reliant Post-Acute Care Solutions, calls the readmission penalties an extension or further progression of the government's value-based purchasing mentality.

"What we are seeing is an effort to shift folks to lower cost – but still clinically appropriate – levels of care," he said. "These dynamics will force SNFs to reevaluate and improve their clinical competencies, to accept patients and then treat them in place. It's no longer acceptable for the medical director to make rounds in person twice a month and do the rest by telephone."

Instead, someone needs to be on site several times a week, working with nursing staff and developing protocols and pathways to control variability, Dr. Harrington said. "And in many cases that will be a hospitalist. Hospitalists are finding ways to partner and provide that level of care. I believe good hospitalist groups can change the facility for the better, and fairly quickly."

What happens in post-acute care

Cari Levy, MD, PhD, who does hospital coverage and post-acute care for a number of facilities and home health agencies in the Denver area, calls the changes coming to SNFs a thrilling time for post-acute care.

"Suddenly medical professionals care about what happens in the post-acute world," she said. "Everyone is now looking at the same measures. If this works the way it should, there would be a lot more mutual respect between providers."

SNFs that are concerned about their readmissions rates will want to do root-cause analysis to figure out what's going on, Dr. Levy said. "Maybe the doctor didn't do a good assessment. Maybe it was just a tough case. Once you start talking, you'll develop systems to help everyone responsible. Hospitalists can be part of that conversation," she said.

Jerome Wilborn, MD, national medical director of post-acute care for TeamHealth, Knoxville, Tenn., says his company is one of the largest groups tackling these issues. "And we're aligning around these precepts very quickly. If I'm a hospital administrator, I'm already under the gun with readmissions penalties and with Press Ganey patient satisfaction scores weighing heavily on me. Medicare will be paying more based on value, not volume, so our income will be more dependent on our outcomes," Dr. Wilborn said.

"You can have a good outcome at Shady Oaks and a terrible outcome at Whispering Pines, for all sorts of reasons. The hospital wants to make sure we're sending patients to facilities that produce good outcomes," he explained. "But there has to be communication between providers – the SNF medical director, the hospitalists, and the emergency department."

A TeamHealth doctor in Phoenix has convened a consortium of providers from different care settings to meet and talk about cases and how they could have gone better. "The reality is, these conversations are going on all over," Dr. Wilborn said. "What's driving them is the realization of what we all need to do in this new environment."

Opportunities from reforms

Robert Burke, MD, FHM, assistant chief of Hospital Medicine at the Denver VA Medical Center, is lead author of a study in the Journal of Hospital Medicine highlighting implications and opportunities from reforms in post-acute care.[3] Hospitalists may not appreciate that post-acute care is poised to undergo transformative change from the recently legislated reforms, opening opportunities for hospitalists to improve health care value by improving transitions of care, he noted.

"Most post-acute care placement decisions are made in the hospital," Dr. Burke said. "As hospitalizations shorten, post-acute care utilization is rising, resulting in rapidly increasing costs. Bundled payments for care improvement often include a single payment for the acute hospital and for post-acute care for up to 90 days postdischarge for select conditions, which incentivizes hospitalists to reduce hospital length of stay and to choose post-acute alternatives with lower costs," he said.

"My sense is that payment reform will put pressure on physicians to use home health care more often than institutional care, because of the cost pressures. We know that hospitalists choose long-term care facility placements less often when participating in bundled payment," Dr. Burke said. "I think few hospitalists really know what happens on a day-to-day basis in SNFs – or in patients' homes, for that matter."

According to Dr. Burke, there are just not enough data currently to guide these decisions. He said that, based on his research, the best thing hospitalists can do is try to understand what's available in post-acute spaces, and build relationships with post-acute facilities.

"Find ways to get feedback on your discharge decisions," he said. "Here in Colorado, we met recently with the local chapter of the Society for Post-Acute and Long-Term Care Medicine, also known as AMDA. It's been revealing for everyone involved."

He recommends AMDA's learning modules – which are designed for doctors who are new to long-term care – to any hospitalist who is entering the post-acute world. TH

References

1. Mor V et al. The revolving door of rehospitalization from skilled nursing facilities. Health Aff (Millwood). 2010 Jan-Feb;29(1):57-64.

2. Brennan N et al. Data Brief: Sharp reduction in avoidable hospitalizations among long-term care facility residents. The CMS Blog, 2017 Jan 17.

3. Burke RE et al. Post-acute care reform: Implications and opportunities for hospitalists. J Hosp Med. 2017 Jan;12(1):46-51.

Readmission rates linked to hospital quality measures

Experts say readmission measure classifies true differences in performance

BY Alicia Gallegos

Frontline Medical News

Kimberly Pack/Thinkstock

Poorer-performing hospitals have higher readmission rates than better-performing hospitals for patients with similar diagnoses, a study shows.

Lead author Harlan M. Krumholz, MD, of Yale University, New Haven, Conn., and his colleagues analyzed Centers for Medicare & Medicaid Services hospital-wide readmission data and divided data from July 2014 through June 2015 into two random samples. Researchers used the first sample to calculate the risk-standardized readmission rate within 30 days for each hospital and classified hospitals into performance quartiles, with a lower readmission rate indicating better performance. The second study sample included patients who had two admissions for similar diagnoses at different hospitals that occurred more than 1 month and less than 1 year apart. Researchers compared the observed readmission rates among patients who had been admitted to hospitals in different performance quartiles. The analysis included all discharges occurring from July 1, 2014, through June 30, 2015, from short-term acute care or critical access hospitals in the United States involving Medicare patients who were aged 65 years or older.

In the period studied, there were a total of 7,163,152 hospitalizations, of which 6,910,341 met the inclusion criteria for the hospital-wide risk-standardized readmission measure. Of these hospitalizations, 3,455,171 discharges (involving 2,741,289 patients and 4,738 hospitals) were randomly selected for the first sample for calculation of hospital-readmission performance. The second sample included 3,455,170 discharges, 132,283 of which involved patients who had two or more admissions for similar diagnoses at least 30 days apart.

Results found that among the patients hospitalized more than once for similar diagnoses at different hospitals, the readmission rate was significantly higher among patients admitted to the worst-performing quartile of hospitals than among those admitted to the best-performing quartile (absolute difference in readmission rate, 2.0 percentage points; 95% confidence interval, 0.4-3.5; $P = .001$) (N Engl J Med. 2017. doi: 10.1056/NEJMsa1702321). The differences in the comparisons of the other quartiles were smaller and not significant, according to the study.

The findings suggest that hospital quality contributes at least in part to readmission rates, independent of patient factors, study authors concluded.

"This study addresses a persistent concern that national readmission measures may reflect differences in unmeasured factors rather than in hospital performance," study authors noted in the study. "The findings suggest that hospital quality contributes at least in part to readmission rates, independent of patient factors. With use of patients who were admitted twice within 1 year with similar diagnoses to different hospitals, this study was able to isolate hospital signals of performance while minimizing differences among the patients. In these cases, because the same patients had similar admissions at two hospitals, the characteristics of the patients, including their level of social disadvantage, level of education, or degree of underlying illness, were broadly the same. The alignment of the differences that we observed with the results of the CMS hospital-wide readmission measure also adds to evidence that the readmission measure classifies true differences in performance." Dr. Krumholz and seven coauthors reported receiving support from contracts with the Center for Medicare & Medicaid Services to develop and reevaluate performance measures that are used for public reporting.

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Readmission risk: Isolating hospital effects from patient effects

The Hospital Readmission Reduction Program (HRRP) was established in 2011 by a provision in the Affordable Care Act (ACA) requiring Medicare to reduce payments to hospitals with relatively high readmission rates for patients in traditional Medicare.

Dr. Krumholz

Since the inception of the HRRP, readmission rates have declined across all measured diagnostic categories resulting in estimates of 565,000 fewer Medicare readmissions through 2015.[1] These reductions seem to be driven by penalties demonstrated by the fact that readmissions fell more quickly at hospitals that had readmission penalties than at other hospitals. Although the severity and fairness of the penalties can be debated, the HRRP has been successful in achieving the goal of reducing readmissions.

Despite these declines seen in most hospitals, readmission rates have not declined among all hospitals. Hospitals that have higher proportions of low-income Medicare patients have not had as significant reduction in readmissions as their counterparts.[2] One of the biggest complaints leveled at the HRRP program is that it is indifferent to the socioeconomic circumstances of a hospital's patient population. In many of these hospitals, efforts to reduce readmissions have been seen as futile exercises in a patient population with complex social needs.

A study published in the journal Health Affairs found that socioeconomic factors do appear to drive many of the difference in readmission rates between safety net hospitals and their more prosperous peers. However, it also suggested that hospital performance may play a factor as well.[3]

The NEJM article, Hospital-Readmission Risk – Isolating Hospital Effects from Patient Effects confirms this. This well-designed review determined that hospitals, independent of a patient's socioeconomic status, had an impact on the likelihood of patient being readmitted. The more complicated question of what higher functioning hospitals did to reduce readmissions was not addressed. It is certain that some hospitals will face greater challenges in reducing readmissions. It is difficult to determine which socioeconomic factors play the biggest role in driving readmission rates and even more difficult to change them. This study also demonstrates that despite challenging conditions, reductions in readmissions can occur.

As the primary focus and leader of health care in most communities, hospitals are best equipped to reach into the community and to develop successful transition programs that limit readmissions and begin to address complex social needs. Of course this must be a coordinated effort among many groups, but the hospital and its organization is in the right position to take a leading role. It is essential that hospitalists, who are on the front lines of this process, play a significant role.

Many hospitals with patients who have complex needs are rising to the occasion. Motivated by the HRRP, unique innovations to improve care transitions out of hospitals are being developed. Hospitals that are serving low socioeconomic populations are finding innovative ways to reduce readmissions. These include identifying high-risk social conditions driving readmissions, intensive discharge planning, and deploying community health care workers. A key component of this has been addressing the opioid epidemic.

Despite some opposition, the HHRP has worked by aligning financial incentives with good health care. The program was successful not by developing complicated metrics, but rather by simply providing financial incentives for good care and then allowing innovation to develop independently. Hopefully this study further promotes these efforts. TH

Kevin Conrad, MD, is medical director of community affairs and healthy policy at Ochsner Health System, New Orleans.

References

1. Zuckerman RB et al. Readmissions, observation, and the hospital readmissions reduction program. N Engl J Med. 2016 April 21;374:1543-1551.

2. Jencks SF et al. Hospitalizations among patients in the Medicare Fee-for-Service Program. N Engl J Med. 2009.360(14):1418-1428; Epstein AM et al. The relationship between hospital admission rates and rehospitalizations. N Engl J Med. 2011. 365(24):2287-2295.

3. Kahn C et al. Assessing Medicare's hospital Pay-for-Performance programs and whether they are achieving their goals. Health Affairs. 2015 Aug;34(8).

BP accuracy is the ghost in the machine

BY M. Alexander Otto
Frontline Medical News

EXPERT ANALYSIS FROM JOINT HYPERTENSION 2017

SAN FRANCISCO – Amid all the talk about subgroup blood pressure targets and tiny differences in drug regimens at a recent hypertension meeting, there was an elephant in the room that attendees refused to ignore.

Hypertension control – the No. 1 way to prevent cardiovascular death – depends on a simple measurement taught to all medical practitioners, but one that's rarely done right: blood pressure measurement. When it comes to the one thing that matters most, "we do it wrong," said Steven Yarows, MD, a primary care physician in Chelsea, Mich., who estimated he's taken 44,000 blood pressures in his 36 years of practice.

Inaccurate measurement is such a problem in the United States that someone in his audience half-joked that the American Heart Association should release two hypertension guidelines the next time around, one for when blood pressure is measured correctly, "and one for the rest of us."

Everyone in medicine is taught that people should rest a bit and not talk while their blood pressure is taken; that the last measurement matters more than the first; and that most Americans need a large-sized cuff. Current guidelines are based on patients sitting for 5-10 minutes alone in a quiet room while an automatic machine averages their last three to five blood pressures.

But when Dr. Yarows asked his 300 or so audience members – hypertension physicians who paid to come to the meeting – how many actually followed those rules, four hands went up. It's not good enough; "if you are going to make a diagnosis that lasts a lifetime, you have to be accurate," he said at the joint scientific sessions of the American Heart Association Council on Hypertension, AHA Council on Kidney Cardiovascular Disease, and American Society of Hypertension.

There's resistance. No one has a room set aside for blood pressure; staff don't want to deal with it; and at a time when primary care doctors are nickel and dimed for everything they do, insurers haven't stepped up to pay to make accurate blood pressure a priority.

To do it right, you have to ask patients to come in 10 minutes early and have a room set up for them where they can sit alone with a large oscillometric cuff to average a few blood pressures at rest, Dr. Yarows said. They also need at least one 24-hour monitoring.

> "Most of the time, the patient walks over from the waiting room, they get on the scale which automatically elevates the blood pressure tremendously, and then they sit down and talk about their family while their blood pressure is being taken."
>
> – Steven Yarows, MD

"Most of the time, the patient walks over from the waiting room, they get on the scale which automatically elevates the blood pressure tremendously, and then they sit down and talk about their family while their blood pressure is being taken." Even in normotensive patients, that alone could raise systolic pressure 20 mm Hg or more, he said. It makes one-time blood pressure pretty much meaningless.

The biggest problem is that blood pressure is hugely variable, so it's hard to know what matters. In one of Dr. Yarows' normotensive patients, BP varied 44 mm Hg systolic and 37 mm Hg diastolic over 24 hours. In a hypertensive patient, systolic pressure varied 62 mm Hg and diastolic 48 mm Hg over 24 hours. Another patient was 114/85 mm Hg at noon, and 159/73 mm Hg an hour later. "That's a huge spread," he said.

Twenty-four hour monitoring is the only way to really know if patients are hypertensive and need treatment. "Any person you suspect of having hypertension, before you place them on medicine, you should have 24 hour blood pressure monitoring. This is the most effective way to determine if they do have high blood pressure," and how much it needs to be lowered, he said.

Dr. Yarows had no disclosures.

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Mental Health Care

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ably the top manpower shortage among all specialties," said Joe Parks, MD, medical director of the National Council for Behavioral Health. "We have about a third the number of psychiatrists that most estimates say we need, and the number per capita is decreasing." A significant percentage of psychiatrists – more than 50% – accept only cash, bypassing the low reimbursement rates even private insurance typically offers.

This is all evidence of our broad unwillingness, as a society, to invest in mental health, said Teresa Nguyen, LCSW, vice president of policy and programs at Mental Health America. "If we can't reimburse people fairly for doing really important work, we're not going to drive up the demand for more people to think about how to better serve people from a mental health perspective."

Hospitals, of course, feel those financial disincentives too, which discourage them from investments of their own. "It's a difficult population to manage, and it's difficult to manage the financial realities of mental health as well," said John McHugh, PhD, assistant professor of health policy at Columbia University, New York. "If you were a hospital administrator looking to invest your last dollar and you have the option of investing it in a new heart institute or in behavioral health service, more likely than not, you're going to invest it in the more profitable cardiovascular service line."

Providers of last resort

But much of the burden of caring for this population ends up falling on hospitals by default. At Denver Health, Melanie Rylander, MD, medical director of the inpatient psychiatric unit, reports seeing this manifest in three categories of patients. First, there is an influx of people coming into the emergency department with primary mental health issues.

"We're also seeing an influx of people coming in with physical problems, and upon assessment it becomes very clear very quickly that the real issue is an underlying mental health issue," she said. Then there are the people coming in for the same physical problems over and over – maybe decompensated heart failure or chronic obstructive pulmonary disease exacerbations – because mental health issues are impeding their ability to take care of themselves.

Some hospitalists say they feel ill equipped to care for these patients. "We don't have the facility or the resources many times to properly care for their psychiatric needs when they're in the hospital. It's not really part of an internist's training to be familiar with a lot of the medications," said Atashi Mandal, MD, a hospitalist and pediatrician in Los Angeles. "Sometimes they get improperly medicated because we don't know what else to do and the patient's behavioral issues are escalating, so it's really a difficult position."

"If we can't reimburse people fairly for doing really important work, we're not going to drive up the demand for more people to think about how to better serve people from a mental health perspective."

–Teresa Nguyen, LCSW, vice president of policy and programs at Mental Health America

"We're also seeing an influx of people coming in with physical problems, and upon assessment it becomes very clear very quickly that the real issue is an underlying mental health issue."

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It's a dispiriting experience for a hospitalist. "It really bothers me when I am trying to care for a patient who has psychiatric needs, and I feel I'm not able to do it, and I can't find resources, and I feel that this patient's needs are being neglected – not because we don't care, and not because of a lack of effort by the staff. It's just set up to fail," Dr. Mandal said.

Ending the silo mentality

Encouraging a more holistic view of health across health care would be an important step to begin to address the problem – after all, the mind and the body are not separate.

"We work in silos, and we really have to stop doing that because these are intertwined," said Corey Karlin-Zysman, MD, FHM, FACP, chief of the division of hospital medicine at Northwell Health. "A schizophrenic will become worse when they're medically ill. That illness will be harder to treat if their psychiatric illness is active." This is starting to happen in the outpatient setting, evidenced by the expansion of the integrated care model, where a primary care doctor is the lead physician working in combination with psychologists, psychiatrists, and social workers. Communication among providers becomes simpler, and patients don't fall through the cracks as often while trying to navigate the system.

"How do we promote even more of that? If we make things easier for patients and increase the odds of compliance, then maybe they won't need to go to the hospital," Dr. Karlin-Zysman said. "Patients with behavioral health issues are just not getting the level of care and attention they need, and we have to figure it out. They're going to be a bigger and bigger proportion of patients that we're going to see in the hospital setting, but it doesn't have to be dealt with in the hospital setting if it's better treated in the outpatient setting."

That idea of integration is also making its way into the hospital setting in various ways. In their efforts to bring the care to the patient, rather than the other way around, Dr. Karlin-Zysman's hospital embedded two hospitalists in the neighboring inpatient psychiatric hospital; when patients need medical treatment, they can receive it without interrupting their behavioral health treatment. As a result, patients who used to end up in their emergency department don't anymore, and their 30-day readmission rate has fallen by 50%.

But at its foundation, care integration is more of an attitude than a system; it begins with a mindset.

"We talk so much today about system reform, integrated systems, blah, blah," said Lisa Rosenbaum, MD, a cardiologist at Brigham and Women's Hospital, Boston. "I don't want to make it seem like it's not going to work, but what does it mean for the patient who is psychotic and has 10 problems, with whom you have 15 minutes? Taking good care of these patients means you have to take a deep breath and put in a lot of time and deal with all these things that have nothing to do with the health system under which you practice. There's this 'only so much you can do' feeling that is a problem in itself, because there's actually a lot we can do."

Hospitals and communities

It's axiomatic to say that a better approach to mental health would be based around prevention and early intervention, rather than the less crisis-oriented system we have now. Some efforts are being made in that direction, and they involve, and require, outreach outside the hospital.

"The best hospitals doing work in mental health are going beyond the hospital walls; they're really looking at their community," Dr. Nguyen said. "You have hospitals, like Accountable Care Organizations, who are trying to move earlier and think about mental health from a pediatric standpoint: How can we support parents and children during critical phases of brain growth? How can we provide prevention services?" Ultimately, those efforts should help lower future admission rates to EDs and hospitals.

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That forward-looking approach may be necessary, but it's also a challenge. "As a hospital administrator, I would think that you look out at the community and see this problem is not going away – in fact, it is likely going to get worse," Dr. McHugh said. "A health system may look at themselves and say we have to take the lead on this." The difficulty is that thinking of it in a sense of value to the community, and making the requisite investments, will have a very long period of payout; a health system that's struggling may not be able to do it. "It's the large [health systems] that tend to be more integrated … that are thinking about this much differently," he said.

Still, the reality is that's where the root of the problem lies, Dr. Rylander said – not in the hospital, but in the larger community. "In the absence of very basic needs – stable housing, food, heating – it's really not reasonable to expect that people are going to take care of their physical needs," she said. "It's a much larger social issue: how to get resources so that these people can have stable places to live, they can get to and from appointments, that type of thing."

Those needs are ongoing, of course. Many of these patients suffer from chronic conditions, meaning people will continue to need services and support, said Ron Honberg, JD, senior policy adviser for the National Alliance on Mental Illness. Often, people need services from different systems. "There are complexities in terms of navigating those systems and getting those systems to work well together. Until we make inroads in solving those things, or at least improving those things, the burdens are going to fall on the providers of last resort, and that includes hospitals," he said.

A collaborative effort may be needed, but hospitals can still be active participants and even leaders.

"If hospitals really want to address these problems, they need to be part of the discussions taking place in communities among the various systems and providers and advocates," Mr. Honberg said. "Ultimately, we need to develop a better community-based system of care, and a better way of handing people off from inpatient to community-based treatment, and some accountability in terms of requiring that people get services, so they don't get rehospitalized quickly. You're increasingly seeing accountability now with other health conditions; we're measuring things in Medicare like rehospitalization rates and the like. We need to be doing that with mental health treatment as well."

What a hospitalist can do

One thing hospitalists might consider is starting that practice at their own hospitals, measuring, recording, and sharing that kind of information.

"Hospitalists should measure systematically, and in a very neutral manner, the total burden and frequency of the problem and report it consistently to management, along with their assessment that this impairs the quality of care and creates patient risk," Dr. Parks said. That information can help hospitalists lobby for access to psychiatric personnel, be that in person or through telemedicine. "We don't have to lay hands on you. There's no excuse for any hospital not having a contract in place for on-demand consultation in the ER and on the floors."

Track outcomes, too, Dr. Mandal suggests. With access to the right personnel, are you getting patients out of the ED faster? Are you having fewer negative outcomes while these patients are in the hospital, such as having to use restraints or get security involved? "Hopefully you can get some data in terms of how much money you've saved by decreasing the length of stays and decreasing inadvertent adverse effects because the patients weren't receiving the proper care," he said.

"It's a difficult population to manage, and it's difficult to manage the financial realities of mental health as well. If you were a hospital administrator looking to invest your last dollar and you have the option of investing it in a new heart institute or in behavioral health service, more likely than not, you're going to invest it in the more profitable cardiovascular service line."

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As this challenge seems likely to continue to grow, hospitalists might consider finding more training in mental health issues themselves so they are more comfortable handling these issues, Dr. Parks said. "The average mini-psych rotation from medical school is only 4 weeks," he noted. "The ob.gyn. is at least 8 weeks and often 12 weeks, and if you don't go into ob.gyn., you're going to see a lot more mentally ill people through the rest of your practice, no matter what you do, than you are going to see pregnant women."

Just starting these conversations – with patients, with colleagues, with family and friends – might be the most important change of all. "Even though nobody is above these issues afflicting them, this is still something that is not part of an open dialogue, and this is something that affects our own colleagues," Dr. Mandal said. "I don't know how many more trainees jumping out of windows it will take, or colleagues going through depression and feeling that it's a sign of weakness to even talk about it.

"We need to create safe harbors within our own medical communities and acknowledge that we ourselves can be prone to this," he said. "Perhaps by doing that, we will develop more empathy and become more comfortable, not just with ourselves and our colleagues but also helping these patients. People get overwhelmed and throw their hands up because it is just such a difficult issue. I don't want people to give up, both from the medical community and our society as a whole – we can't give up."

A med-psych unit pilot project

Med-psych units can be a good model to take on these challenges. At Long Island Jewish Medical Center, they launched a pilot project to see how one would work in their community and summarized the results in an SHM abstract.

The hospital shares a campus with a 200-bed inpatient psych hospital, and doctors were seeing a lot of back and forth between the two institutions, said Dr. Karlin-Zysman. "Patients would come into the hospital because they had an active medical issue, but because of their behavioral issues, they'd have to have continuous observation. It would not be uncommon for us to have sometimes close to 30 patients who needed 24-hour continuous observation to make sure they were not hurting themselves." These PCAs or nurse's assistants were doing 8-hour shifts, so each patient needed three. "The math is staggering – and with not any better outcomes."

So the hospital created a 15-bed closed med-psych unit for medically ill patients with behavioral health disorders. They staffed it with a dedicated hospitalist, a nurse practitioner, a psychologist, and a nurse manager.

The number of patients requiring continuous observation fell to single digits. Once in their own unit, these patients caused less disruption and stress on the medical units. They had a lower length of stay compared to their previous admissions in other units, and this became one of the hospital's highest performing units in terms of patient experience.

The biggest secret of their success, Dr. Karlin-Zysman said, is cohorting. "Instead of them going to the next open bed, wherever it may be, you get the patients all in one place geographically, with a team trained to manage those patients." Another factor: It's a hospitalist-run unit. "You can't have 20 different doctors taking care of the patients; it's one or two hospitalists running this unit."

Care models like this can be a true win-win, and her hospital is using them more and more.

"I have a care model that's a stroke unit; I have a care model that's an onc unit and one that's a pulmonary unit," she said. "We're creating these true teams, which I think hospitalists really like being part of. What's that thing that makes them want to come to work every day? Things like this: running a care model, becoming specialized in something." There are research and abstract opportunities for hospitalists on these units too, which also helps keep them engaged, she said. "I've used this care model and things like that to reduce burnout and keep people excited."

The persistent mortality gap

Patients with mental illness tend to receive worse medical care than people without, studies have shown; they die an average of

"There are complexities in terms of navigating those systems and getting those systems to work well together. Until we make inroads in solving those things, or at least improving those things, the burdens are going to fall on the providers of last resort, and that includes hospitals."

–Ron Honberg, JD, senior policy adviser for the National Alliance on Mental Illness

25 years earlier, largely from preventable or treatable conditions such as cardiovascular disease and diabetes. The World Health Organization has called the problem "a hidden human rights emergency."

In one in a series of articles on mental health, Dr. Rosenbaum: Might physician attitudes toward mentally ill people contribute to this mortality gap, and if so, can we change them?

She recognizes the many obstacles physicians face in treating these patients. "The medicines we have are good but not great and can cause obesity and diabetes, which contributes to cardiovascular morbidity and mortality," Dr. Rosenbaum said. "We have the adherence challenge for the psychiatric medications and for medications for chronic disease. It's hard enough for anyone to take a medicine every day, and to do that if you're homeless or you don't have insight into the need for it, it's really hard."

Also, certain behaviors that are more common among people with serious mental illness – smoking, substance abuse, physical inactivity – increase their risk for chronic diseases.

These hurdles may foster a sense of helplessness among hospitalists who have just a small amount of time to spend with a patient, and attitudes may be hard to change.

"Negotiating more effectively about care refusals, more adeptly assessing capacity, and recognizing when our efforts to orchestrate care have been inadequate seem feasible," Dr. Rosenbaum writes. "Far harder is overcoming any collective belief that what mentally ill people truly need is not something we can offer." That's why a truly honest examination of attitudes and biases is a necessary place to start.

She tells the story of one mentally ill patient she learned of in her research, who, after decades as the quintessential frequent flier in the ER, was living stably in the community. "No one could have known how many tries it would take to help him get there," she writes. His doctor told her, "Let's say 10 attempts are necessary. Someone needs to be number 2, 3 and 7. You just never know which number you are."

Education for physicians

A course created by the National Alliance on Mental Illness addresses mental illness issues from a provider perspective.

"Although the description states that the course is intended for mental health professionals, it can be and has been used to educate and inform other healthcare professionals as well," said Mr. Honberg. The standard course takes 15 hours; there is an abbreviated 4-hour alternative as well. More information can be found at http://www.nami.org/Find-Support/NAMI-Programs/NAMI-Provider-Education. TH

Sources

1. Szabo L. Cost of Not Caring: Nowhere to Go. USA Today. https://www.usatoday.com/story/news/nation/2014/05/12/mental-health-system-crisis/7746535/. Accessed March 10, 2017.

2. Mental Health America. The State of Mental Health in America. http://www.mentalhealthamerica.net/issues/state-mental-health-america. Accessed March 30, 2017.

3. Karlin-Zysman C, Lerner K, Warner-Cohen J. Creating a Hybrid Medicine and Psychiatric Unit to Manage Medically Ill Patients with Behavioral Health Disorders [abstract]. Journal of Hospital Medicine. 2015; 10 (suppl 2). http://www.shmabstracts.com/abstract/creating-a-hybrid-medicine-and-psychiatric-unit-to-manage-medically-ill-patients-with-behavioral-health-disorders/. Accessed March 19, 2017.

4. Garey J. When Doctors Discriminate. New York Times. http://www.nytimes.com/2013/08/11/opinion/sunday/when-doctors-discriminate.html. August 10, 2013. Accessed March 15, 2017.

5. Rosenbaum L. Closing the mortality gap – mental illness and medical care. N Engl J Med. 2016; 375:1585-1589. doi: 10.1056/NEJMms1610125.

6. Rosenbaum L. Unlearning Our Helplessness – Coexisting Serious Mental and Medical Illness. N Engl J Med. 2016;375:1690-4. doi: 10.1056/NEJMms1610127.

KEY CLINICAL QUESTION

When should I transfuse a patient who has anemia?

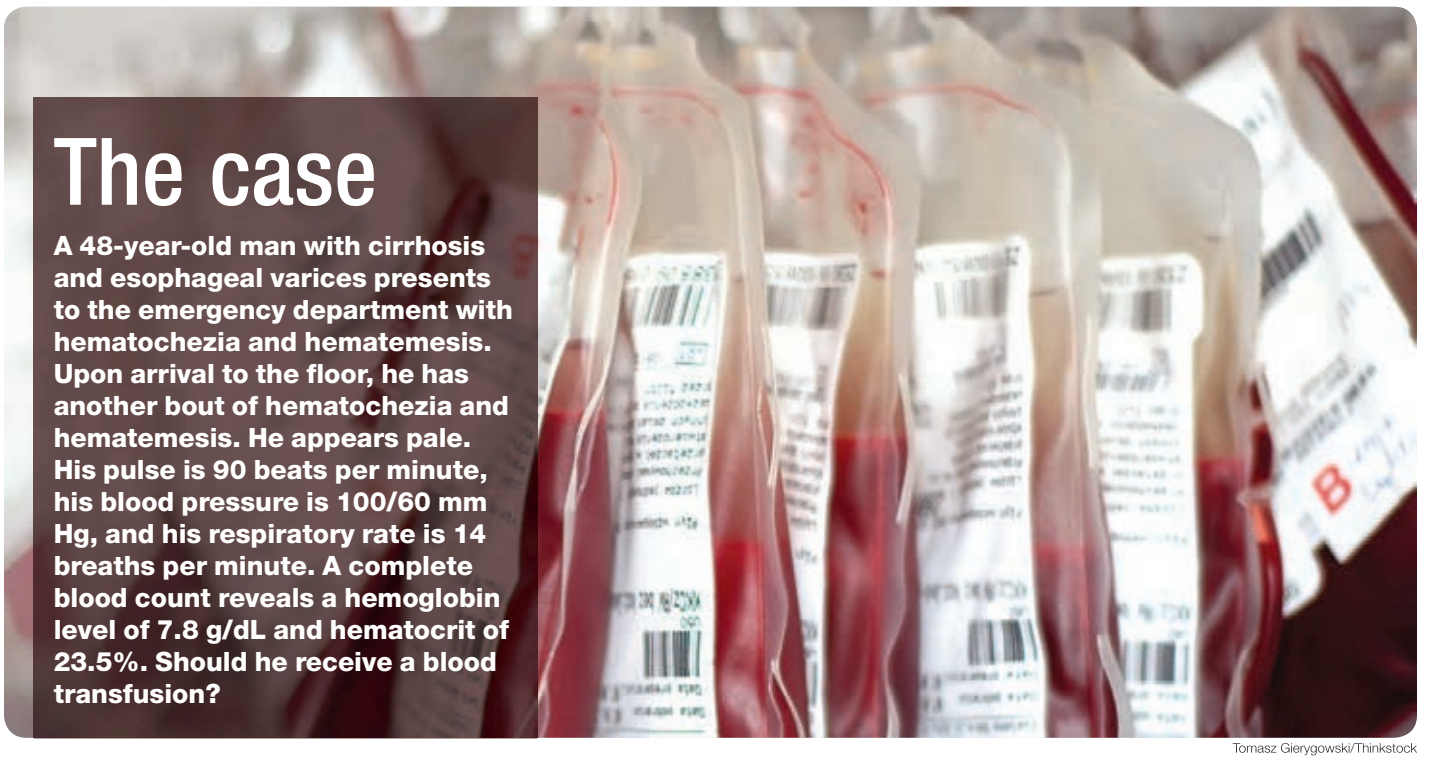
Weighing the potential adverse effects, cost of transfusions

By Hemal N. Sampat, MD; Rebecca Berger, MD; and Farrin A. Manian, MD, MPH

Massachusetts General Hospital, Boston

KEY POINTS

- The AABB guidelines recommend transfusing stable general medical inpatients to a hemoglobin level of 7 g/dL.
- For patients undergoing orthopedic surgery or cardiac surgery, and those with preexisting cardiovascular disease, a transfusion threshold of 8 g/dL is recommended.
- Patients with hemodynamic instability or active blood loss should be transfused based on clinical criteria, and not absolute hemoglobin levels.
- Patients with acute coronary syndrome, severe thrombocytopenia, and chronic transfusion–dependent anemia are excluded from these recommendations.
- Further studies are needed to further refine these recommendations to specific patient populations in maximizing the benefits and minimizing the risks of blood transfusions.



The case

A 48-year-old man with cirrhosis and esophageal varices presents to the emergency department with hematochezia and hematemesis. Upon arrival to the floor, he has another bout of hematochezia and hematemesis. He appears pale. His pulse is 90 beats per minute, his blood pressure is 100/60 mm Hg, and his respiratory rate is 14 breaths per minute. A complete blood count reveals a hemoglobin level of 7.8 g/dL and hematocrit of 23.5%. Should he receive a blood transfusion?

Tomasz Gierygowski/Thinkstock

Introduction

Anemia is one of the most frequent conditions in hospitalized patients. Anemia is variably associated with morbidity and mortality depending on chronicity, etiology, and associated comorbidities. Before the 1980s, standard practice was to transfuse all patients to a hemoglobin level greater than 10 g/dL and/or a hematocrit greater than 30%. However, with concerns about the potential adverse effects and cost of transfusions, the safety and effectiveness of liberal versus restrictive transfusion thresholds became the subject of many studies.

Risks of red blood cell transfusions include transmission of bloodborne pathogens and, more commonly, immunological reactions and other noninfectious complications. Modern screening methods for HIV, hepatitis B, and hepatitis C infections in developed countries have markedly reduced the incidence of transfusion-related diseases due to these pathogens, such that in the United States the risk of transfusion-related HIV, hepatitis B, or hepatitis C infections is extremely rare (nearly 1 in a million units or less).[1,2] In contrast, noninfectious complications such as febrile transfusion reactions, transfusion-associated circulatory overload, and allergic reactions are much more common.[1]

The 2016 AABB (formerly American Association of Blood Banks) guidelines focused on the evidence for hemodynamically stable and asymptomatic hospitalized patients. The guidelines are based on randomized, controlled trials that measured mortality as the primary endpoint. Most trials and guidelines reinforce that, if a patient is symptomatic or hemodynamically unstable from anemia or hemorrhage, RBC transfusion is appropriate irrespective of hemoglobin level.

Overview of the data

Critically ill patients

The Transfusion Requirements in Critical Care (TRICC) trial, published in 1999, was the first large clinical trial examining the safety of restrictive transfusion thresholds in critically ill patients.[3]

The TRICC trial randomized 838 euvolemic critically ill patients with anemia to a restrictive transfusion strategy (transfusing for hemoglobin less than 7 g/dL) or a liberal strategy (transfusing for hemoglobin less than 10 g/dL). Thirty-day mortality was not significantly different between the two groups, though in prespecified subgroups of less acutely ill patients (APACHE-II score 20 or lower) and younger patients (age less than 55 years), mortality was significantly lower in the restrictive transfusion group. Overall in-hospital mortality was also lower in the restrictive strategy arm.

The subsequent Transfusion Requirements in Septic Shock (TRISS) study involved patients with septic shock and similarly found that patients assigned to a restrictive strategy (transfusion for hemoglobin less than 7 g/dL) had similar outcomes to patients assigned to a liberal strategy (transfusion for hemoglobin less than 9 g/dL). The patients in the restrictive group received fewer transfusions, but had similar rates of 90-day mortality, use of life support, and number of days alive and out of the hospital.[4]

These large randomized, controlled trials in critically ill patients served as the basis for subsequent studies in patient populations outside of the ICU.

Acute upper GI bleed

Acute upper gastrointestinal bleeding (UGIB) is one of the most common indications for RBC transfusion.

A 2013 single-center study randomized patients with and without cirrhosis who presented with evidence of UGIB, such as hematemesis, melena, or bloody nasogastric aspirate, to either a restrictive or liberal transfusion strategy, with hemoglobin transfusion thresholds of less than 7 g/dL and less than 9 g/dL, respectively. All patients received 1 unit of RBCs before assessing baseline hemoglobin level, and all patients underwent upper endoscopy within 6 hours. Patients in the restrictive-strategy group had significantly lower mortality at

CONTINUED ON PAGE 33

Dr. Sampat, Dr. Berger, and Dr. Manian are hospitalists at Massachusetts General Hospital, Boston.

45 days, compared with the liberal-strategy group. This finding persisted in a subgroup of patients with Childs-Pugh class A or B cirrhosis, but not Childs-Pugh class C.[5]

The TRIGGER trial, a cluster randomized multicenter study published in 2015, also found no difference in clinical outcomes, including mortality, between a restrictive strategy and liberal strategy for transfusion of patients with UGIB.[6]

Perioperative patients

Transfusion thresholds have been studied in large randomized trials for perioperative patients undergoing cardiac and orthopedic surgery.

The Transfusion Requirements After Cardiac Surgery (TRACS) trial, published in 2010, randomized patients undergoing cardiac surgery at a single center to a liberal strategy of blood transfusion (to maintain a hematocrit 30% or greater) or a restrictive strategy (hematocrit 24% or greater).[7] Mortality and severe morbidity rates were noninferior in the restrictive strategy group. Mean hemoglobin concentrations were 10.5 g/dL in the liberal-strategy group and 9.1 g/dL in the restrictive-strategy group. Independent of transfusion strategy, the number of transfused red blood cell units was an independent risk factor for clinical complications and death at 30 days.

Subsequently, the Functional Outcomes in Cardiovascular Patients Undergoing Surgical Hip Fracture Repair (FOCUS) study enrolled patients aged 50 years and older with cardiovascular disease or coronary artery disease risk factors undergoing hip surgery randomized to either a liberal transfusion strategy (goal hemoglobin 10 g/dL or greater) or restrictive strategy (goal hemoglobin 8 g/dL or greater) was performed.[8] This study found no difference in outcomes between the two groups, including mortality, inability to walk, or in-hospital complications.

Based on these two trials, as well as other smaller randomized controlled trials and observational studies, the AABB guidelines recommend a restrictive RBC transfusion threshold of 8 g/dL for patients undergoing cardiac or orthopedic surgery.[1]

Acute coronary syndrome, stable coronary artery disease, and congestive heart failure

Anemia is an independent predictor of major adverse cardiovascular events in patients with acute coronary syndrome.[9] However, it remains controversial if transfusion has benefit or causes harm in patients with acute coronary syndrome. No randomized controlled trials have yet been published on this topic, and observational studies and subgroups from randomized controlled trials have yielded mixed results.

Similarly, there are no randomized controlled trials examining liberal versus restrictive transfusion goals for asymptomatic hospitalized patients with stable coronary artery disease (CAD). However, patients with CAD were included in the TRICC and FOCUS trials.[3,8] Of patients enrolled in the TRICC trial, 26% had a primary or secondary diagnosis of cardiac disease; subgroup analysis found no significant differences in 30-day mortality between treatment groups, similar to that of the entire study population.[3]

QUIZ

In which of the following scenarios is RBC transfusion LEAST indicated?

A. Active diverticular bleed, heart rate 125 beats/minute, blood pressure 85/65 mm HG, hemoglobin 10.5 g/dL

B. Septic shock in the ICU, hemoglobin 6.7 g/dL

C. Pulmonary embolism in the setting of stable coronary artery disease and hemoglobin 8.7 g/dL

D. Lymphoma on chemotherapy, hemoglobin 7.5 g/dL, patient becomes dizzy when standing

Answer: C – A hemoglobin transfusion goal of 8.0 g/dL is recommended for patients with cardiovascular disease. The patient in answer choice A has active blood loss, tachycardia, and hypotension, all pointing to the need for blood transfusion irrespective of an initial hemoglobin level greater than 8.0 g/dL. The patient in answer choice B has a hemoglobin level greater than 7.0 g/dL, and the patient in choice D is symptomatic, possibly from anemia, as well as on chemotherapy, therefore making transfusion a reasonable option.

Most trials and guidelines reinforce that, if a patient is symptomatic or hemodynamically unstable from anemia or hemorrhage, RBC transfusion is appropriate irrespective of hemoglobin level.

In a subgroup analysis of patients with "cardiovascular disease" the FOCUS trial found no difference in outcomes between a restrictive and liberal transfusion strategy, although there was a marginally higher incidence of myocardial infarction in the restrictive arm in the entire study population.[8]

Although some studies have included patients with congestive heart failure (CHF) as a subgroup, these subgroups are often not powered to show clinically meaningful differences. The risk of volume overload is one explanation for why transfusions may be harmful for patients with CHF.

Based on these limited available data, the AABB guidelines recommend a "restrictive RBC transfusion threshold (hemoglobin level of 8 g/dL)" for patients "with preexisting cardiovascular disease," without distinguishing among patients with acute coronary syndrome, stable CAD, and CHF, but adds that the "threshold of 7 g/dL is likely comparable with 8 g/dL, but randomized controlled trial evidence is not available for all patient categories."[1]

Of note, certain patient populations, such as those with end-stage renal disease, oncology patients (especially those undergoing active chemotherapy), and those with comorbid conditions such as thrombocytopenia and coagulopathy are specifically excluded from the AABB guidelines. The reader is referred to guidelines from respective specialty societies for further guidance.

Back to our case

This 48-year-old man with cirrhosis and esophageal varices presenting with ongoing blood loss due to hematochezia and hematemesis with a hemoglobin of 7.8 g/dL should be transfused because of his active bleeding; his hemoglobin level should not be a determining factor under such circumstances. This distinction is one of the most fundamental in interpreting the guidelines; that is, patients with hemodynamic insult, symptoms, and/or ongoing bleeding should be evaluated clinically, independent of their hemoglobin level.

Bottom line

Although recent guidelines generally favor a more restrictive hemoglobin goal threshold, in the presence of active blood loss or hemodynamic instability, blood transfusion should be considered independent of the initial hemoglobin level. TH

References

1. Carson JL et al. Clinical Practice Guidelines From the AABB: Red Blood Cell Transfusion Thresholds and Storage. JAMA. 2016;316:2025-35.

2. Dwyre DM et al. Hepatitis B, hepatitis C and HIV transfusion-transmitted infections in the 21st century. Vox Sang. 2011;100:92-8.

3. Hébert PC et al. A multicenter, randomized, controlled clinical trial of transfusion requirements in critical care. Transfusion Requirements in Critical Care Investigators, Canadian Critical Care Trials Group. N Engl J Med. 1999;340:409-17.

4. Holst LB et al. Lower versus higher hemoglobin threshold for transfusion in septic shock. N Engl J Med. 2014;371:1381-91.

5. Villanueva C et al. Transfusion strategies for acute upper gastrointestinal bleeding. N Engl J Med. 2013;368:11-21.

6. Jairath V et al. Restrictive versus liberal blood transfusion for acute upper gastrointestinal bleeding (TRIGGER): a pragmatic, open-label, cluster randomised feasibility trial. Lancet. 2015;386:137-44.

7. Hajjar LA et al. Transfusion requirements after cardiac surgery: the TRACS randomized controlled trial. JAMA. 2010;304:1559-67.

8. Carson JL et al. Liberal or restrictive transfusion in high-risk patients after hip surgery. N Engl J Med. 2011;365:2453-62.

9. Sabatine MS et al. Association of hemoglobin levels with clinical outcomes in acute coronary syndromes. Circulation. 2005;111:2042-9.

Steroids underused in bacterial meningitis despite low risk

By Amy Karon
Frontline Medical News

AT IDWEEK 2017

SAN DIEGO – Physicians often skipped out on using steroids when treating bacterial meningitis even though the benefits clearly outweigh the risks, Cinthia Gallegos, MD, reported during an oral presentation at an annual meeting on infectious diseases.

In a recent multicenter retrospective cohort study, only 40% of adults with bacterial meningitis received steroids within 4 hours of hospital admission, as recommended by the European Society of Clinical Microbiology and Infectious Diseases (ESCMID), and only 14% received steroids concomitantly or 10-20 minutes prior to antibiotic initiation, as recommended by the Infectious Diseases Society of America (IDSA), said Dr. Gallegos, an ID fellow at University of Texas, Houston.

"Steroids are being underutilized in our patient population," she said. "And when steroids are used, they are being used later than is recommended."

To evaluate the prevalence of guideline-concordant steroid use, Dr. Gallegos and her associates analyzed the medical records of 120 adults with culture-confirmed, community-acquired bacterial meningitis treated at 10 Houston-area hospitals between 2008 and 2016.

Median duration of steroid therapy was 4 hours, which is consistent with IDSA guidelines, she noted.

Among the five patients (4%) who developed delayed cerebral thrombosis, three had *Streptococcus pneumoniae* meningitis, one had methicillin-resistant *Staphylococcus aureus* meningitis, and one had *Listeria* meningitis. All received either dexamethasone monotherapy or dexamethasone and methylprednisolone within 4 hours of antibiotic initiation. They showed an initial improvement, including normal CT and MRI, but their clinical condition deteriorated between 5 and 12 days later. Two patients died, two developed moderate or severe disability, and one fully recovered.

The 4% rate closely resembles what is seen in the Netherlands, said Diederik van de Beek, MD, PhD, of the Academic Medical Center in Amsterdam, who co-moderated the session at IDWeek 2017. "We have some recent data where we did autopsies of cases, and we saw a huge amount of bacterial fragments around the blood vessels," he said. "We have seen this in previous autopsy studies, but here it was a massive amount of bacterial fragments."

> "The difficult question is whether we give 4 days of steroids or longer. A clinical trial is not feasible, so we [recommend] 4 days."

Researchers have suggested that delayed cerebral thrombosis in bacterial meningitis results from increases in C5a and C5b-9 levels in the cerebrospinal fluid and from an increase in the tissue factor VII pathway.

These patients historically developed vasculitis, but this complication "has disappeared somewhat in the dexamethasone era," said Dr. van de Beek, lead author of the 2016 ESCMID guidelines on bacterial meningitis. "It appears that some patients are 'pro-inflammatory' and still react 7-9 days after treatment," he said. "The difficult question is whether we give 4 days of steroids or longer. A clinical trial is not feasible, so we [recommend] 4 days."

Left untreated, bacterial meningitis is fatal in up to 70% of cases, and about one in five survivors faces limb loss or neurologic disability, according to the Centers for Disease Control and Prevention. The advent of penicillin and other antibiotics dramatically improved survival, but death rates remained around 10% for meningitis associated with *Neisseria meningitides* and *Haemophilus influenza* infection, and often exceeded 30% for *S. pneumoniae* meningitis. That's important because, besides antibiotics, the only treatment that decreases mortality has been shown to be steroids.

High-quality evidence supports their use. In a double-blind, randomized, multicenter trial of 301 adults with bacterial meningitis, adjunctive dexamethasone was associated with a 50% improvement in mortality, compared with adjunctive placebo (N Engl J Med. 2002 Nov 14;347[20]:1549-56). Other data confirm that steroids do not prevent vancomycin from concentrating in CSF or increase the risk of hippocampal apoptosis. But although both IDSA and ESCMID endorse steroids as adjunctive therapy to help control intracranial pressure in patients with bacterial meningitis, studies have shown much higher rates of steroid use in the Netherlands, Sweden, and Denmark than in the United States.

The Grant A. Starr Foundation provided funding. The investigators had no conflicts of interest.

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Firearms' injury toll of $3 billion just 'a drop in the bucket'

By Randy Dotinga
Frontline Medical News

AT THE ACS CLINICAL CONGRESS

SAN DIEGO – The true impact of firearms injuries may be greatly underestimated, according to a study presented at the American College of Surgeons Clinical Congress.

The study estimates that firearms injuries cost nearly $3 billion a year in emergency department and inpatient treatment costs. The real cost is likely to be 10-20 times higher, said the lead author of the study, Faiz Gani, MD, a research fellow with the Johns Hopkins Surgery Center for Outcomes Research, Baltimore.

Dr. Gani and his colleagues launched their study (Health Affairs 2017;36[10]:1729-38) to better understand the cost of firearms injuries, including nonfatal or accidental injuries.

Most estimates of the cost of firearm injuries are outdated or focused on states or single trauma centers, he said.

The researchers retrospectively analyzed data from the Nationwide Emergency Department Sample of the Healthcare Cost and Utilization Project for the years 2006-2014. They identified 150,930 patients who appeared alive in emergency departments over that period with firearms injuries, and they estimated the total weighted number at 704,916. They found that the incidence of firearms injury admissions actually fell during 2006-2013 (from 27.9 visits per 100,000 people to 21.5, P < .001) but bumped up by 23.7% to 26.6 during 2013-2014 (*P* < .001).


Dr. Gani

The average costs of emergency and inpatient care for patients injured by firearms were $5,254 and $95,887, respectively, collectively amounting to about $2.8 billion each year. Dr. Gani said that the estimation of the cost and impact of firearms injuries don't account for people who died of firearms injuries before reaching the ED.

The cost estimates also don't take follow-up care, rehabilitation, and lifelong disability into account. The surgical portion of the cost is likely to be much higher, he said.

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Carvedilol fails to reduce variceal bleeds in acute-on-chronic liver failure

By Denise Fulton
Frontline Medical News

AT THE LIVER MEETING 2017

WASHINGTON – Treatment with carvedilol reduced the incidence of sepsis and acute kidney injury and improved survival at 28 days but did not significantly reduce the progression of esophageal varices in patients with acute-on-chronic liver failure.

A total of 136 patients with acute-on-chronic liver failure with small or no esophageal varices and a hepatic venous pressure gradient (HVPG) of 12 mm Hg or greater were enrolled in a single-center, prospective, open-label, randomized controlled trial: 66 were randomized to carvedilol and 70 to placebo, according to Sumeet Kainth, MD, of the Institute of Liver and Biliary Sciences in New Delhi.

More than 90% of patients were men with a mean age of 44 years, and composition of the treatment and placebo groups was similar. About 70% in each group had alcoholic hepatitis (the reason for acute liver failure in most). Mean Model for End-Stage Liver Disease (MELD) scores were about 25. Hemodynamic parameters also were comparable, with a mean HVPG of about 19 mm Hg, Dr. Kainth said at the annual meeting of the American Association for the Study of Liver Diseases.

Patients in the treatment group received a median maximum tolerated dose of carvedilol of 12.5 mg, with a range of 3.13 mg to 25 mg.

Morbidity and mortality were high, as is expected with acute-on-chronic liver failure, he noted. A total of 36 patients died before the end of the 90-day study period. Another 23 experienced adverse events and 2 progressed to liver transplant.

HVPG at 90 days decreased significantly in both groups. In the carvedilol group, 90-day HVPG was 16 mm Hg, compared with 19.7 mm Hg at baseline (*P* less than .01). For placebo patients, 90-day HVPG spontaneously improved to 14.8 mm Hg from the baseline of 17.2 mm Hg (*P* less than .01).

Carvedilol did not significantly slow the development or growth of varices, however, Dr. Kainth said. At 90 days, varices had progressed in 9 of 40 patients (22.5%) of patients on carvedilol and 8 of 31 (25.8%) of placebo patients.

> Treatment with carvedilol did not achieve significant reductions in variceal bleeding, "possibly due to the low number of bleeds seen in the study [because of] the exclusion of patients with large varices."
>
> –Sumeet Kainth, MD

Significantly fewer patients in the carvedilol group developed acute kidney injury at 28 days (14% vs. 38% on placebo) and sepsis (5% vs. 20%). Mortality also was reduced significantly at 28 days (11% vs. 24%).

Treatment with carvedilol did not achieve significant reductions in variceal bleeding, "possibly due to the low number of bleeds seen in the study [because of] the exclusion of patients with large varices," Dr. Kainth said.

The study was sponsored by Institute of Liver and Biliary Sciences. Dr. Kainth reported no relevant conflicts of interest.

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Wait 2+ days to replace CVCs in patients with candidemia

By Amy Karon
Frontline Medical News

AT IDWEEK 2017

SAN DIEGO – Wait at least 2 days before replacing central venous catheters (CVC) in patients with catheter-associated candidemia, according to the results of a single-center retrospective cohort study of 228 patients.

Waiting less than 2 days to replace a CVC increased the odds of 30-day mortality nearly sixfold among patients with catheter-related bloodstream infections due to candidemia, even after controlling for potential confounders, Takahiro Matsuo, MD, said at an annual scientific meeting on infectious diseases. No other factor significantly predicted mortality in univariate or multivariate analyses, he said. "This is the first study to demonstrate the optimal timing of central venous catheter replacement in catheter-related [bloodstream infection] due to *Candida*."

Invasive candidiasis is associated with mortality rates of up to 50%, noted Dr. Matsuo, who is a fellow in infectious diseases at St. Luke's International Hospital, Tokyo. Antifungal therapy improves outcomes, and most physicians agree that removing a CVC does, too. To better pinpoint optimal timing of catheter replacement, Dr. Matsuo and his associates examined risk factors for 30-day mortality among patients with candidemia who were treated at St. Luke's between 2004 and 2015.

Among 228 patients with candidemia, 166 had CVCs, and 144 had their CVC removed. Among 71 patients who needed their CVC replaced, 15 died within 30 days. Central venous catheters were replaced less than 2 days after removal in 87% of patients who died and in 54% of survivors (*P* = .04). The association remained statistically significant after the researchers accounted for potential confounders (adjusted odds ratio, 5.9; 95% confidence interval, 1.2-29.7; *P* = .03).

Patients who died within 30 days of CVC replacement also were more likely to have hematologic malignancies (20% versus 4%), to have diabetes (13% vs. 11%), to be on hemodialysis (27% vs. 16%), and to have a history of recent corticosteroid exposure (20% versus 11%) compared with survivors, but none of these associations reached statistical significance. Furthermore, 30-day mortality was not associated with gender, age, *Candida* species, endophthalmitis, or type of antifungal therapy, said Dr. Matsuo, who spoke at the combined annual meetings of the Infectious Diseases Society of America, the Society for Healthcare Epidemiology of America, the HIV Medicine Association, and the Pediatric Infectious Diseases Society.

An infectious disease consultation was associated with about a 70% reduction in the odds of mortality in the multivariate analysis, but the 95% confidence interval crossed 1.0, rendering the link statistically insignificant.

Given the small sample size and single-center design of this study, its findings ideally should be confirmed in a larger randomized controlled trial, Dr. Matsuo said. The investigators also did not track whether patients were fungemic at the time of CVC replacement, he noted.

The researchers reported having no conflicts of interest.

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VA study finds high MRSA infection risk among those colonized with the bacterium

By Doug Brunk
Frontline Medical News

AT FROM ID WEEK 2017

SAN DIEGO – Patients colonized with methicillin-resistant *Staphylococcus aureus* are at high risk of MRSA infection both in the predischarge and postdischarge time periods, results from an 8-year Veterans Affairs study showed.

"MRSA colonization is recognized as being a strong predictor of subsequent infection," Richard E. Nelson, PhD, said at an annual scientific meeting on infectious diseases. "What's less understood is, are there differences in infection rates among patients who are colonized at different times? And, is there a difference between patients who import colonization with them to a hospital versus those who acquire it during a hospital stay? In addition, infection control efforts mainly focus on the predischarge time period. What about infections that develop post discharge?"

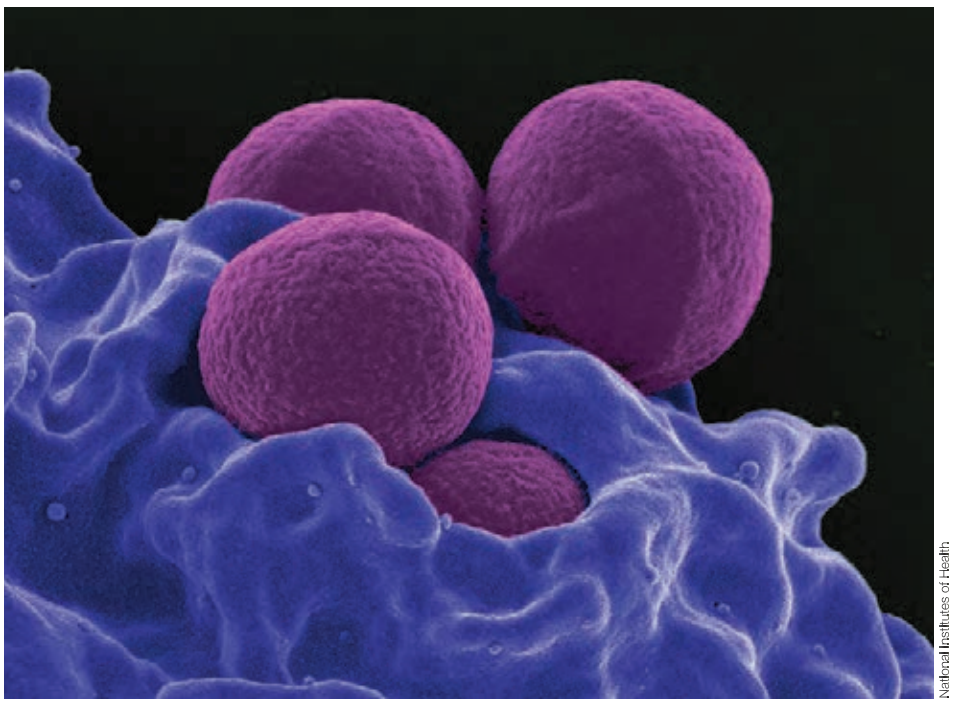
In an effort to investigate these questions, Dr. Nelson of the VA Salt Lake City Healthcare System, and his associates, evaluated more than 1.3 million acute care inpatient admissions to 125 VA hospitals nationwide from January 2008 through December 2015 who had surveillance tests performed for MRSA carriage.

The researchers restricted admissions to individuals with at least 365 days of VA activity prior to admission and categorized them into three groups: no colonization (defined as those who had no positive surveillance tests (n = 1,196,928); importation (defined as those who tested positive for MRSA colonization on admission (n = 95,833); and acquisition (defined as those who did not test positive for MRSA on admission but tested positive on a subsequent surveillance test during their admission (n = 15,146). Next, they captured MRSA infections in these individuals prior to discharge and at 30 and 90 days post discharge. Infections were defined as positive MRSA cultures taken from sterile sites, including blood, catheter site, or bone.

Overall, patients were in their mid-60s, and those who imported MRSA and those who acquired it were more likely to be male, less likely to be married, and more likely to not have health insurance. "The acquirers had by far the highest rates of predischarge infections, which peaked in 2010 and declined through 2015," said Dr. Nelson, who also holds a faculty position in University of Utah's department of internal medicine, in the division of epidemiology. Specifically, the proportion of predischarge MRSA infections, compared with 30 days post discharge, were 40.4% vs. 59.6%, respectively, in the no colonization group; 63% vs. 37% in the importation group; and 80.8% vs. 19.2% in the acquisition group.

He also reported that the proportion of predischarge MRSA infections, compared with 90 days post discharge, were 20.5% vs. 79.5%, respectively, in the no colonization group; 47.3% vs. 52.7% in the importation group; and 70.5% vs. 29.5% in the acquisition group. The time from acquisition to infection was a mean of 8.7 days in the 30-day analysis and a mean of 22.4 days in the 90-day analysis.

Multivariate logistic regression revealed that the impact of colonization status on infection was highest in the acquisition group, compared with the importation group. Specifically, the odds ratio of developing a MRSA infection among the importation group was 29.22 in the predischarge period, OR 10.87 at postdischarge 30 days, and OR 7.64 at postdischarge 90 days (*P* less than .001 for all). Meanwhile, the OR among the acquisition group was 85.19 in the predischarge period, OR 13.01 at postdischarge 30 days, and OR 8.26 at postdischarge 90 days (*P* less than .001 for all).


National Institutes of Health

"This is likely an underestimate of postdischarge infections, because we're missing the infections that occur in non-VA facilities."

Dr. Nelson acknowledged certain limitations of the study, including the fact that it only identified postdischarge infections that were detected in a VA facility. "This is likely an underestimate of postdischarge infections, because we're missing the infections that occur in non-VA facilities," he said at the event, which marked the combined annual meetings of the Infectious Diseases Society of America, the Society for Healthcare Epidemiology of America, the HIV Medicine Association, and the Pediatric Infectious Diseases Society. "Also, patients can be colonized in many different body locations, but the VA protocol is that the surveillance test be done in the nostrils. So we may have misclassified patients who were colonized in a different body location as being uncolonized, when in fact they were colonized."

The study was funded by a grant from the VA. Dr. Nelson reported having no financial disclosures.

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Negative nasal swabs reliably predicted no MRSA infection

By Amy Karon
Frontline Medical News

AT IDWEEK 2017

SAN DIEGO – Only 0.2% of intensive care–unit patients developed methicillin-resistant *Staphylococcus aureus* infections after testing negative on nasal surveillance swabs, said Darunee Chotiprasitsakul, MD, of Johns Hopkins University in Baltimore.

But physicians often prescribed vancomycin anyway, accumulating nearly 7,400 potentially avoidable treatment-days over a 19-month period, she said during an oral presentation at an annual meeting on infectious diseases.

Current guidelines recommend empiric vancomycin to cover MRSA infection when ill patients have a history of MRSA colonization or recent hospitalization or exposure to antibiotics. Patients whose nasal screening swabs are negative for MRSA have been shown to be at low risk of subsequent infection, but guidelines don't address how to use swab results to guide decisions about empiric vancomycin, Dr. Chotiprasitsakul said.

Therefore, she and her associates studied 11,882 adults without historical MRSA infection or colonization who received nasal swabs for routine surveillance in adult ICUs at Johns Hopkins. A total of 441 patients (4%) had positive swabs, while 96% tested negative.


Dr. Chotiprasitsakul

Among patients with negative swabs, only 25 (0.22%) developed MRSA infection requiring treatment. Thus, the negative predictive value of a nasal swab for MRSA was 99%, making the probability of infection despite a negative swab "exceedingly low," Dr. Chotiprasitsakul said.

But clinicians seemed not to use negative swab results to curtail vancomycin therapy, she found. Rates of empiric vancomycin use were 36% among patients with positive swabs and 39% among those with negative swabs. Over 19 months, ICU patients received 7,371 avoidable days of vancomycin, a median of 3 days per patient.

Matching patients by ICU and days at risk identified no significant predictors of MRSA infection, Dr. Chotiprasitsakul said. Johns Hopkins Medicine has robust infection control practices, high compliance with hand hygiene and contact precautions, and low rates of nosocomial MRSA transmission, she noted. The predictive value of a negative MRSA nasal swab could be lower at institutions where that isn't the case, she said.

Johns Hopkins is working to curtail unnecessary use of vancomycin, said senior author Sara Cosgrove, MD, professor of medicine in infectious diseases and director of the department of antimicrobial stewardship. The team has added the findings to its guidelines for antibiotic use, which are available in an app for Johns Hopkins providers, she said in an interview.

The stewardship also highlights the data when discussing starting and stopping vancomycin in patients at very low risk for MRSA infections, she said. "In general, providers have responded favorably to acting upon this new information," Dr. Cosgrove noted.

Johns Hopkins continues to track median days of vancomycin use per patient and per 1,000 days in its units. "[We] will assess if there is an impact on vancomycin use over the coming year," said Dr. Cosgrove.

The investigators had no conflicts of interest. The event marked the combined annual meetings of the Infectious Diseases Society of America, the Society for Healthcare Epidemiology of America, the HIV Medicine Association, and the Pediatric Infectious Diseases Society.

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Study: EHR malpractice claims rising

By Alicia Gallegos
Frontline Medical News

Malpractice claims involving the use of electronic health records are on the rise, according to data from The Doctors Company.

Cases in which EHRs were a factor grew from 2 claims during 2007-2010 to 161 claims from 2011 to December 2016, according an analysis published Oct. 16 by The Doctors Company, a national medical malpractice insurer.

Researchers with The Doctors Company analyzed closed claims during 2007-2016 in their nationwide claims database. Of 66 EHR-related claims from July 2014 through December 2016, 50% were associated with system factors, such as failure of drug or clinical decision support alerts, according to the study. Another 58% of claims involved user factors, such as copying and pasting progress notes. (Numbers do not add up to 100% because some claims had more than one cause.)

The majority of EHR-related claims during 2014-2016 stemmed from incidents in a doctor's office or a hospital clinic (35%), while the second most common location was a patient's room. Malpractice claims involving EHRs were most commonly alleged against ob.gyns, followed by family physicians, and orthopedists. Diagnosis errors and improper medication management were the top most frequent allegations associated with EHR claims.

The analysis shows that, while digitization of medicine has improved patient safety, it also has a dark side – as evidenced by the emergence of new kinds of errors, said Robert M. Wachter, MD, a professor at the University of California, San Francisco, and a member of the board of governors for The Doctors Company.

"This study makes an important contribution by chronicling actual errors, such as wrong medications selected from an autopick list, and helps point the way to changes ranging from physician education to EHR software design," Dr. Wachter said in a statement.

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"This study makes an important contribution by chronicling actual errors, such as wrong medications selected from an autopick list, and helps point the way to changes ranging from physician education to EHR software design."

—*Robert M. Wachter, MD*

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PROTONIX® (pantoprazole sodium)

BRIEF SUMMARY OF PRESCRIBING INFORMATION. SEE PACKAGE INSERT FOR FULL PRESCRIBING INFORMATION.

INDICATIONS AND USAGE

PROTONIX For Delayed-Release Oral Suspension and PROTONIX Delayed-Release Tablets are indicated for:

Short-Term Treatment of Erosive Esophagitis Associated With Gastroesophageal Reflux Disease (GERD) PROTONIX is indicated in adults and pediatric patients five years of age and older for the short-term treatment (up to 8 weeks) in the healing and symptomatic relief of erosive esophagitis. For those adult patients who have not healed after 8 weeks of treatment, an additional 8-week course of PROTONIX may be considered. Safety of treatment beyond 8 weeks in pediatric patients has not been established.

Maintenance of Healing of Erosive Esophagitis PROTONIX is indicated for maintenance of healing of erosive esophagitis and reduction in relapse rates of daytime and nighttime heartburn symptoms in adult patients with GERD. Controlled studies did not extend beyond 12 months.

Pathological Hypersecretory Conditions Including Zollinger-Ellison Syndrome PROTONIX is indicated for the long-term treatment of pathological hypersecretory conditions, including Zollinger-Ellison syndrome.

CONTRAINDICATIONS

PROTONIX is contraindicated in patients with known hypersensitivity to any component of the formulation or any substituted benzimidazole. Hypersensitivity reactions may include anaphylaxis, anaphylactic shock, angioedema, bronchospasm, acute interstitial nephritis, and urticaria.

WARNINGS AND PRECAUTIONS

Presence of Gastric Malignancy In adults, symptomatic response to therapy with PROTONIX does not preclude the presence of gastric malignancy. Consider additional follow-up and diagnostic testing in adult patients who have a suboptimal response or an early symptomatic relapse after completing treatment with a PPI. In older patients, also consider an endoscopy.

Acute Interstitial Nephritis Acute interstitial nephritis has been observed in patients taking PPIs including PROTONIX. Acute interstitial nephritis may occur at any point during PPI therapy and is generally attributed to an idiopathic hypersensitivity reaction. Discontinue PROTONIX if acute interstitial nephritis develops.

***Clostridium difficile*-Associated Diarrhea** Published observational studies suggest that PPI therapy like PROTONIX may be associated with an increased risk of *Clostridium difficile* associated diarrhea, especially in hospitalized patients. This diagnosis should be considered for diarrhea that does not improve.

Patients should use the lowest dose and shortest duration of PPI therapy appropriate to the condition being treated.

Bone Fracture Several published observational studies suggest that proton pump inhibitor (PPI) therapy may be associated with an increased risk for osteoporosis-related fractures of the hip, wrist, or spine. The risk of fracture was increased in patients who received high-dose, defined as multiple daily doses, and long-term PPI therapy (a year or longer). Patients should use the lowest dose and shortest duration of PPI therapy appropriate to the condition being treated. Patients at risk for osteoporosis-related fractures should be managed according to established treatment guidelines.

Cutaneous and Systemic Lupus Erythematosus Cutaneous lupus erythematosus (CLE) and systemic lupus erythematosus (SLE) have been reported in patients taking PPIs, including pantoprazole. These events have occurred as both new onset and an exacerbation of existing autoimmune disease. The majority of PPI-induced lupus erythematous cases were CLE.

The most common form of CLE reported in patients treated with PPIs was subacute CLE (SCLE) and occurred within weeks to years after continuous drug therapy in patients ranging from infants to the elderly. Generally, histological findings were observed without organ involvement.

Systemic lupus erythematosus (SLE) is less commonly reported than CLE in patients receiving PPIs. PPI associated SLE is usually milder than non-drug induced SLE. Onset of SLE typically occurred within days to years after initiating treatment primarily in patients ranging from young adults to the elderly. The majority of patients presented with rash; however, arthralgia and cytopenia were also reported.

Avoid administration of PPIs for longer than medically indicated. If signs or symptoms consistent with CLE or SLE are noted in patients receiving PROTONIX, discontinue the drug and refer the patient to the appropriate specialist for evaluation. Most patients improve with discontinuation of the PPI alone in 4 to 12 weeks. Serological testing (e.g. ANA) may be positive and elevated serological test results may take longer to resolve than clinical manifestations.

Cyanocobalamin (Vitamin B-12) Deficiency Generally, daily treatment with any acid-suppressing medications over a long period of time (e.g., longer than 3 years) may lead to malabsorption of cyanocobalamin (Vitamin B-12) caused by hypo- or achlorhydria. Rare reports of cyanocobalamin deficiency occurring with acid-suppressing therapy have been reported in the literature. This diagnosis should be considered if clinical symptoms consistent with cyanocobalamin deficiency are observed.

Hypomagnesemia Hypomagnesemia, symptomatic and asymptomatic, has been reported rarely in patients treated with PPIs for at least three months, in most cases after a year of therapy. Serious adverse events include tetany, arrhythmias, and seizures. In most patients, treatment of hypomagnesemia required magnesium replacement and discontinuation of the PPI.

For patients expected to be on prolonged treatment or who take PPIs with medications such as digoxin or drugs that may cause hypomagnesemia (e.g., diuretics), health care professionals may consider monitoring magnesium levels prior to initiation of PPI treatment and periodically.

Tumorigenicity Due to the chronic nature of GERD, there may be a potential for prolonged administration of PROTONIX. In long-term rodent studies, pantoprazole was carcinogenic and caused rare types of gastrointestinal tumors. The relevance of these findings to tumor development in humans is unknown.

Concomitant Use of PROTONIX with Methotrexate Literature suggests that concomitant use of PPIs with methotrexate (primarily at high dose; see methotrexate prescribing information) may elevate and prolong serum levels of methotrexate and/or its metabolite, possibly leading to methotrexate toxicities. In high-dose methotrexate administration, a temporary withdrawal of the PPI may be considered in some patients.

Interference with Laboratory Tests Use of PPIs, including pantoprazole, may increase chromogranin A (CgA) levels which may interfere with investigations for neuroendocrine tumors. To avoid this interference, PPI treatment should be stopped 14 days before CgA measurements.

ADVERSE REACTIONS

The following serious adverse reactions are described below and elsewhere in labeling:

- Acute Interstitial Nephritis
- *Clostridium difficile*-Associated Diarrhea
- Bone Fracture
- Cutaneous and Systemic Lupus Erythematosus
- Cyanocobalamin (Vitamin B-12) Deficiency
- Hypomagnesemia

Clinical Trials Experience The adverse reaction profiles for PROTONIX (pantoprazole sodium) For Delayed-Release Oral Suspension and PROTONIX (pantoprazole sodium) Delayed-Release Tablets are similar.

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice.

Adults Safety in nine randomized comparative US clinical trials in patients with GERD included 1,473 patients on oral PROTONIX (20 mg or 40 mg), 299 patients on an H_2-receptor antagonist, 46 patients on another proton pump inhibitor, and 82 patients on placebo. The most frequently occurring adverse reactions are listed in table below.

Adverse Reactions Reported in Clinical Trials of Adult Patients with GERD at a Frequency of > 2%

	PROTONIX (n=1473) %	Comparators (n=345) %	Placebo (n=82) %
Headache	12.2	12.8	8.5
Diarrhea	8.8	9.6	4.9
Nausea	7.0	5.2	9.8
Abdominal pain	6.2	4.1	6.1
Vomiting	4.3	3.5	2.4
Flatulence	3.9	2.9	3.7
Dizziness	3.0	2.9	1.2
Arthralgia	2.8	1.4	1.2

Additional adverse reactions that were reported for PROTONIX in clinical trials with a frequency of ≤ 2% are listed below by body system:

Body as a Whole: allergic reaction, pyrexia, photosensitivity reaction, facial edema

Gastrointestinal: constipation, dry mouth, hepatitis

Hematologic: leukopenia, thrombocytopenia

Metabolic/Nutritional: elevated CK (creatine kinase), generalized edema, elevated triglycerides, liver enzymes elevated

Musculoskeletal: myalgia

Nervous: depression, vertigo

Skin and Appendages: urticaria, rash, pruritus

Special Senses: blurred vision

Pediatric Patients Safety of PROTONIX in the treatment of Erosive Esophagitis (EE) associated with GERD was evaluated in pediatric patients ages 1 year through 16 years in three clinical trials. Safety trials involved pediatric patients with EE; however, as EE is uncommon in the pediatric population, 249 pediatric patients with endoscopically-proven or symptomatic GERD were also evaluated. All adult adverse reactions to PROTONIX are considered relevant to pediatric patients. In patients ages 1 year through 16 years, the most commonly reported (> 4%) adverse reactions include: URI, headache, fever, diarrhea, vomiting, rash, and abdominal pain.

Additional adverse reactions that were reported for PROTONIX in pediatric patients in clinical trials with a frequency of ≤ 4% are listed below by body system:

Body as a Whole: allergic reaction, facial edema

Gastrointestinal: constipation, flatulence, nausea

Metabolic/Nutritional: elevated triglycerides, elevated liver enzymes, elevated CK (creatine kinase)

Musculoskeletal: arthralgia, myalgia

Nervous: dizziness, vertigo

Skin and Appendages: urticaria

The following adverse reactions seen in adults in clinical trials were not reported in pediatric patients in clinical trials, but are considered relevant to pediatric patients: photosensitivity reaction, dry mouth, hepatitis, thrombocytopenia, generalized edema, depression, pruritus, leukopenia, and blurred vision.

Zollinger-Ellison Syndrome In clinical studies of Zollinger-Ellison Syndrome, adverse reactions reported in 35 patients taking PROTONIX 80 mg/day to 240 mg/day for up to 2 years were similar to those reported in adult patients with GERD.

Postmarketing Experience The following adverse reactions have been identified during postapproval use of PROTONIX. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

These adverse reactions are listed below by body system:

General Disorders and Administration Conditions: asthenia, fatigue, malaise

Hematologic: pancytopenia, agranulocytosis

Hepatobiliary Disorders: hepatocellular damage leading to jaundice and hepatic failure

Immune System Disorders: anaphylaxis (including anaphylactic shock), systemic lupus erythematosus

Infections and Infestations: *Clostridium difficile* associated diarrhea

Investigations: weight changes

Metabolism and Nutritional Disorders: hyponatremia, hypomagnesemia

Musculoskeletal Disorders: rhabdomyolysis, bone fracture

Nervous: ageusia, dysgeusia

Psychiatric Disorders: hallucination, confusion, insomnia, somnolence

Renal and Urinary Disorders: interstitial nephritis

Skin and Subcutaneous Tissue Disorders: severe dermatologic reactions (some fatal), including erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis (TEN, some fatal), angioedema (Quincke's edema) and cutaneous lupus erythematosus

DRUG INTERACTIONS

Interference with Antiretroviral Therapy Concomitant use of atazanavir or nelfinavir with proton pump inhibitors is not recommended. Co-administration of atazanavir or nelfinavir with proton pump inhibitors is expected to substantially decrease atazanavir or nelfinavir plasma concentrations and may result in a loss of therapeutic effect and development of drug resistance.

Coumarin Anticoagulants There have been postmarketing reports of increased INR and prothrombin time in patients receiving proton pump inhibitors, including PROTONIX, and warfarin concomitantly. Increases in INR and prothrombin time may lead to abnormal bleeding and even death. Patients treated with proton pump inhibitors and warfarin concomitantly should be monitored for increases in INR and prothrombin time.

Clopidogrel Concomitant administration of pantoprazole and clopidogrel in healthy subjects had no clinically important effect on exposure to the active metabolite of clopidogrel or clopidogrel-induced platelet inhibition. No dose adjustment of clopidogrel is necessary when administered with an approved dose of PROTONIX.

Drugs for Which Gastric pH Can Affect Bioavailability Due to its effects on gastric acid secretion, pantoprazole can reduce the absorption of drugs where gastric pH is an important determinant of their bioavailability. Like with other drugs that decrease the intragastric acidity, the absorption of drugs such as ketoconazole, ampicillin esters, atazanavir, iron salts, erlotinib, and mycophenolate mofetil (MMF) can decrease.

Co-administration of pantoprazole in healthy subjects and in transplant patients receiving MMF has been reported to reduce the exposure to the active metabolite, mycophenolic acid (MPA), possibly due to a decrease in MMF solubility at an increased gastric pH. The clinical relevance of reduced MPA exposure on organ rejection has not been established in transplant patients receiving PROTONIX and MMF. Use PROTONIX with caution in transplant patients receiving MMF.

False Positive Urine Tests for THC There have been reports of false positive urine screening tests for tetrahydrocannabinol (THC) in patients receiving proton pump inhibitors. An alternative confirmatory method should be considered to verify positive results.

Methotrexate Case reports, published population pharmacokinetic studies, and retrospective analyses suggest that concomitant administration of PPIs and methotrexate (primarily at high dose; see methotrexate prescribing information) may elevate and prolong serum levels of methotrexate and/or its metabolite hydroxymethotrexate. However, no formal drug interaction studies of Methotrexate with PPIs have been conducted.

USE IN SPECIFIC POPULATIONS

Pregnancy

Teratogenic Effects

Pregnancy Category B Reproduction studies have been performed in rats at oral doses up to 88 times the recommended human dose and in rabbits at oral doses up to 16 times the recommended human dose and have revealed no evidence of impaired fertility or harm to the fetus due to pantoprazole. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers Pantoprazole and its metabolites are excreted in the milk of rats. Pantoprazole excretion in human milk has been detected in a study of a single nursing mother after a single 40 mg oral dose. The clinical relevance of this finding is not known. Many drugs which are excreted in human milk have a potential for serious adverse reactions in nursing infants. Based on the potential for tumorigenicity shown for pantoprazole in rodent carcinogenicity studies, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the benefit of the drug to the mother.

Pediatric Use The safety and effectiveness of PROTONIX for short-term treatment (up to eight weeks) of erosive esophagitis (EE) associated with GERD have been established in pediatric patients 1 year through 16 years of age. Effectiveness for EE has not been demonstrated in patients less than 1 year of age. In addition, for patients less than 5 years of age, there is no appropriate dosage strength in an age-appropriate formulation available. Therefore, PROTONIX is indicated for the short-term treatment of EE associated with GERD for patients 5 years and older. The safety and effectiveness of PROTONIX for pediatric uses other than EE have not been established.

1 year through 16 years of age Use of PROTONIX in pediatric patients 1 year through 16 years of age for short-term treatment (up to eight weeks) of EE associated with GERD is supported by: a) extrapolation of results from adequate and well-controlled studies that supported the approval of PROTONIX for treatment of EE associated with GERD in adults, and b) safety, effectiveness, and pharmacokinetic studies performed in pediatric patients.

Safety of PROTONIX in the treatment of EE associated with GERD in pediatric patients 1 through 16 years of age was evaluated in three multicenter, randomized, double-blind, parallel-treatment studies, involving 249 pediatric patients, including 8 with EE (4 patients ages 1 year to 5 years and 4 patients 5 years to 11 years). The children ages 1 year to 5 years with endoscopically diagnosed EE (defined as an endoscopic Hetzel-Dent score ≥ 2) were treated once daily for 8 weeks with one of two dose levels of PROTONIX (approximating 0.6 mg/kg or 1.2 mg/kg). All 4 of these patients with EE were healed (Hetzel-Dent score of 0 or 1) at 8 weeks. Because EE is uncommon in the pediatric population, predominantly pediatric patients with endoscopically-proven or symptomatic GERD were also included in these studies. Patients were treated with a range of doses of PROTONIX once daily for 8 weeks. For safety findings see Adverse Reactions. Because these pediatric trials had no placebo, active comparator, or evidence of a dose response, the trials were inconclusive regarding the clinical benefit of PROTONIX for symptomatic GERD in the pediatric population. The effectiveness of PROTONIX for treating symptomatic GERD in pediatric patients has not been established.

Although the data from the clinical trials support use of PROTONIX for the short-term treatment of EE associated with GERD in pediatric patients 1 year through 5 years, there is no commercially available dosage formulation appropriate for patients less than 5 years of age.

In a population pharmacokinetic analysis, clearance values in the children 1 to 5 years old with endoscopically proven GERD had a median value of 2.4 L/h. Following a 1.2 mg/kg equivalent dose (15 mg for ≤ 12.5 kg and 20 mg for >12.5 to < 25 kg), the plasma concentrations of pantoprazole were highly variable and the median time to peak plasma concentration was 3 to 6 hours. The estimated AUC for patients 1 to 5 years old was 37% higher than for adults receiving a single 40 mg tablet, with a geometric mean AUC value of 6.8 µg·hr/mL.

Neonates to less than one year of age PROTONIX was not found to be effective in a multicenter, randomized, double-blind, placebo-controlled, treatment-withdrawal study of 129 pediatric patients 1 through 11 months of age. Patients were enrolled if they had symptomatic GERD based on medical history and had not responded to non-pharmacologic interventions for GERD for two weeks. Patients received PROTONIX daily for four weeks in an open-label phase, then patients were randomized in equal proportion to receive PROTONIX treatment or placebo for the subsequent four weeks in a double-blind manner. Efficacy was assessed by observing the time from randomization to study discontinuation due to symptom worsening during the four-week treatment-withdrawal phase. There was no statistically significant difference between PROTONIX and placebo in the rate of discontinuation.

In this trial, the adverse reactions that were reported more commonly (difference of ≥ 4%) in the treated population compared to the placebo population were elevated CK, otitis media, rhinitis, and laryngitis.

In a population pharmacokinetic analysis, the systemic exposure was higher in patients less than 1 year of age with GERD compared to adults who received a single 40 mg dose (geometric mean AUC was 103% higher in preterm infants and neonates receiving single dose of 2.5 mg of PROTONIX, and 23% higher in infants 1 through 11 months of age receiving a single dose of approximately 1.2 mg/kg). In these patients, the apparent clearance (CL/F) increased with age (median clearance: 0.6 L/hr, range: 0.03 to 3.2 L/hr).

These doses resulted in pharmacodynamic effects on gastric but not esophageal pH. Following once daily dosing of 2.5 mg of PROTONIX in preterm infants and neonates, there was an increase in the mean gastric pH (from 4.3 at baseline to 5.2 at steady-state) and in the mean % time that gastric pH was > 4 (from 60% at baseline to 80% at steady-state). Following once daily dosing of approximately 1.2 mg/kg of PROTONIX in infants 1 through 11 months of age, there was an increase in the mean gastric pH (from 3.1 at baseline to 4.2 at steady-state) and in the mean % time that gastric pH was > 4 (from 32% at baseline to 60% at steady-state). However, no significant changes were observed in mean intraesophageal pH or % time that esophageal pH was < 4 in either age group.

Because PROTONIX was not shown to be effective in the randomized, placebo-controlled study in this age group, the use of PROTONIX for treatment of symptomatic GERD in infants less than 1 year of age is not indicated.

Geriatric Use In short-term US clinical trials, erosive esophagitis healing rates in the 107 elderly patients (≥ 65 years old) treated with PROTONIX were similar to those found in patients under the age of 65. The incidence rates of adverse reactions and laboratory abnormalities in patients aged 65 years and older were similar to those associated with patients younger than 65 years of age.

Gender Erosive esophagitis healing rates in the 221 women treated with PROTONIX Delayed-Release Tablets in US clinical trials were similar to those found in men. In the 122 women treated long-term with PROTONIX 40 mg or 20 mg, healing was maintained at a rate similar to that in men. The incidence rates of adverse reactions were also similar for men and women.

Patients with Hepatic Impairment Doses higher than 40 mg/day have not been studied in patients with hepatic impairment.

OVERDOSAGE

Experience in patients taking very high doses of PROTONIX (> 240 mg) is limited. Spontaneous post-marketing reports of overdose are generally within the known safety profile of PROTONIX.

Pantoprazole is not removed by hemodialysis. In case of overdosage, treatment should be symptomatic and supportive.

Single oral doses of pantoprazole at 709 mg/kg, 798 mg/kg, and 887 mg/kg were lethal to mice, rats, and dogs, respectively. The symptoms of acute toxicity were hypoactivity, ataxia, hunched sitting, limb-splay, lateral position, segregation, absence of ear reflex, and tremor.

Storage Store PROTONIX For Delayed-Release Oral Suspension and PROTONIX Delayed-Release Tablets at 20° to 25°C (68° to 77°F); excursions permitted to 15° to 30°C (59° to 86°F).

This brief summary is based on PROTONIX Prescribing Information.

LAB-0459-11.0, revised February 2017.

Under license from Takeda, D78467 Konstanz, Germany

Ideal intubation position still unknown

By Andrew D. Bowser
Frontline Medical News

FROM CHEST

In critically ill adults undergoing endotracheal intubation, the ramped position does not significantly improve oxygenation compared with the sniffing position, according to results of a multicenter, randomized trial of 260 patients treated in an intensive care unit.

Moreover, "[ramped] position appeared to worsen glottic view and increase the number of attempts required for successful intubation," wrote Matthew W. Semler, MD, of Vanderbilt University Medical Center, Nashville, Tenn., and his coauthors (Chest. 2017 Oct. doi: 10.1016/j.chest.2017.03.061).

> "Our primary outcome of lowest arterial oxygen saturation is an established endpoint in ICU intubation trials, and is linked to periprocedural cardiac arrest and death."

The ramped and sniffing positions are the two most common patient positions used during emergent intubation, according to investigators. The sniffing position is characterized by supine torso, neck flexed forward, and head extended, while ramped position involves elevating the torso and head.

Some believe the ramped position may offer superior anatomic alignment of the upper airway; however, only a few observational studies suggest it is associated with fewer complications than the sniffing position, the authors wrote.

Accordingly, they conducted a multicenter randomized trial with a primary endpoint of lowest arterial oxygen saturation, hypothesizing that the endpoint would be higher for the ramped position: "Our primary outcome of lowest arterial oxygen saturation is an established endpoint in ICU intubation trials, and is linked to periprocedural cardiac arrest and death," they wrote.

The investigators instead found that median lowest arterial oxygen saturation was not statistically different between groups, at 93% for the ramped position, and 92% for the sniffing position ($P = 0.27$), published data show.

Further results showed that the ramped position appeared to be associated with poor glottic view and more difficult intubation. The incidence of grade III (only epiglottis) or grade IV (no visible glottis structures) views were 25.4% for ramped vs. 11.5% for sniffing ($P = .01$), while the rate of first-attempt intubation was 76.2% for ramped vs 85.4% for sniffing ($P = .02$).

While the findings are compelling, the authors were forthcoming about the potential limitations of the study and differences compared with earlier investigations. Notably, they said, all prior controlled trials of patient positioning during endotracheal intubation were conducted in the operating room, rather than in the ICU.

Also, the operators' skill levels may further explain differences in this study's outcomes from those of similar studies, the researchers noted. Earlier studies included patients intubated by one or two senior anesthesiologists from one center, while this trial involved 30 operators across multiple centers, with the average operator having performed 60 previous intubations. "Thus, our findings may generalize to settings in which airway management is performed by trainees, but whether results would be similar among expert operators remains unknown," the investigators noted.

The authors reported no potential conflicts of interest. One coauthor reported serving on an advisory board for Avisa Pharma.

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Valuable new data amid sparse literature

Editorialists praised the multicenter, randomized design of this study, and its total recruitment of 260 patients. They also noted several limitations of the study that "could shed some light" on the group's conclusions (Chest. 2017 Oct. doi: 10.1016/j.chest.2017.06.002).

"The results diverge from [operating room] literature of the past 15 years that suggest that the ramped position is the preferred intubation position for obese patients or those with an anticipated difficult airway." This may have been caused by shortcomings of this study's design and differences between it and other research exploring the topic of patient positioning during endotracheal intubation, they wrote.

The study lacked a prespecified algorithm for preoxygenation and the operators had relatively low amounts of experience with intubations. Finally, the beds used in this study could contribute to the divergences between this intensive care unit experience and the operating room literature. The operating room table is narrower, firmer, and more stable, while by contrast, the ICU bed is wider and softer, they noted. This "may make initial positioning, maintenance of positioning, and accessing the patient's head more difficult."

Nevertheless, "[this] important study provides ideas for further study of optimal positioning in the ICU and adds valuable data to the sparse literature on the subject in the ICU setting," they concluded.

James Aaron Scott, DO; Jens Matthias Walz, MD, FCCP; and Stephen O. Heard, MD, FCCP, are in the department of anesthesiology and perioperative medicine, UMass Memorial Medical Center, Worcester, Mass. The authors reported no conflicts of interest. These comments are based on their editorial.

Thirty-one percent of multidrug-resistant infections were community acquired

By Amy Karon
Frontline Medical News

AT IDWEEK 2017

SAN DIEGO – Thirty-one percent of multidrug-resistant infections were acquired from the community in a prospective single-center study of a regional hospital.

"Multidrug-resistant organisms have escaped the hospital," Nicholas A. Turner, MD, of Duke University Medical Center, Durham, N.C., and his associates wrote in a poster presented at an annual scientific meeting on infectious diseases. "Community acquisition of multidrug-resistant organisms [MDROs] is increasing, not just within referral centers but also community hospitals. Providers will need to be increasingly aware of this trend."

Infections of MDROs cause about 2,000,000 illnesses and 23,000 deaths annually in the United States, according to the Centers for Disease Control and Prevention. Until recently, MDROs were considered a plague of hospitals. Amid reports of increasing levels of community acquisition, the researchers studied adults admitted to a 202-bed regional hospital between 2013 and 2016. They defined MDROs as infections of methicillin-resistant *Staphylococcus aureus* (MRSA), gram-negative bacteria resistant to more than three antimicrobial classes, vancomycin-resistant *Enterococcus* (VRE), or diarrhea with a positive stool culture for *Clostridium difficile*.

A total of 285 patients had MDROs. *C. difficile* (45%) and MRSA (35%) were most common. In all, 88 (31%) MDROs were community-acquired – that is, diagnosed within 48 hours of admission in patients who were not on dialysis, did not live in a long-term care facility, and had not been hospitalized for more than 48 hours in the past 90 days. A total of 36% of MRSA and multidrug-resistant gram-negative infections were community acquired, as were 25% of *C. difficile* infections. There were only 10 VRE infections, of which none were community-acquired.

After the researchers controlled for clinical and demographic variables, the only significant predictor of community-acquired MDRO was cancer (odds ratio, 2.3; 95% confidence interval, 1.02-5.2). Surgery within the previous 12 months was significantly associated with hospital-acquired MDRO (OR, 0.16; 95% CI, 0.05-0.5).

Traditional risk factors for community-acquired MRSA or *C. difficile* infection did not achieve statistical significance in the multivariable analysis, the researchers noted. "Similar to data from large tertiary care centers, our findings suggest that MDROs are increasingly acquired in the community setting, even at smaller regional hospitals," they concluded. "Further study is needed to track the expansion of MDROs in the community setting."

Dr. Turner reported having no conflicts of interest.

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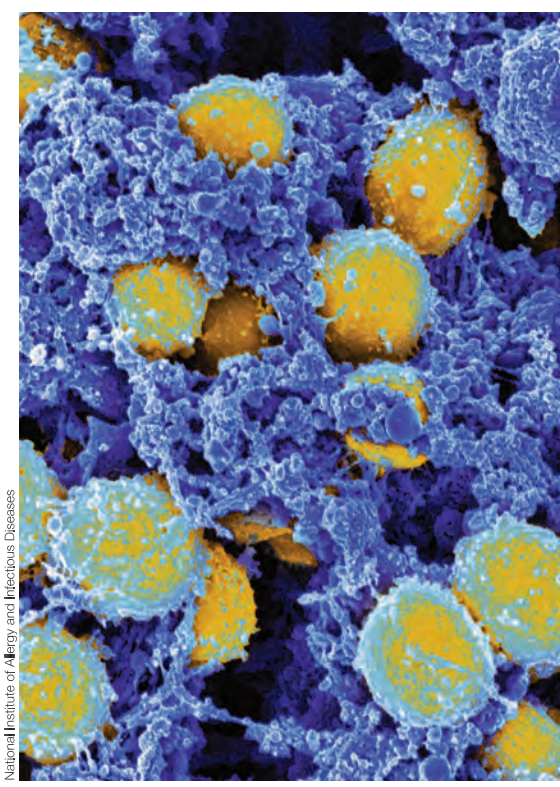

National Institute of Allergy and Infectious Diseases

IN THE LITERATURE

ITL: Physician reviews of HM-centric research

By Mel L. Anderson, MD, FACP; Kinnear Theobald, MD; Matthew Hoegh, MD; Bryan Lublin, MD, MPH; Joseph A. Simonetti, MD, MPH

University of Colorado School of Medicine, Aurora

IN THIS ISSUE

By Mel L. Anderson, MD, FACP

1 Check orthostatic vital signs within 1 minute

CLINICAL QUESTION: What is the relationship between timing of measurement of postural blood pressure (BP) and adverse clinical outcomes?

BACKGROUND: Guidelines recommend measuring postural BP after 3 minutes of standing to avoid potentially false-positive readings obtained before that interval. In SPRINT, orthostatic hypotension (OH) determined at 1 minute was associated with higher risk of emergency department visits for OH and syncope. Whether that finding was because of the shortened interval of measurement is uncertain.

Dr. Anderson

STUDY DESIGN: Atherosclerosis Risk in Communities Study prospective cohort.

SETTING: Four U.S. communities over 2 decades.

SYNOPSIS: In a cohort of 11,429 middle-aged patients, upright BP was measured every 25 seconds over a 5-minute interval after participants had been supine for 20 minutes. About 2-3 seconds elapsed between the end of one BP measurement and the initiation of the next. OH was defined as a 20–mm Hg drop in systolic BP. After researchers adjusted for covariates, OH at 30 seconds and 1 minute were associated with higher odds of dizziness, fracture, syncope, death, and motor vehicle crashes recorded over a median follow-up of 23 years. Measurements after 1 minute were not reliably associated with any adverse outcomes.

BOTTOM LINE: Measuring OH at 30 seconds and 1 minute reliably identifies patients at risk for associated adverse clinical outcomes.

CITATION: Juraschek SP et al. Association of history of dizziness and long-term adverse outcomes with early vs. later orthostatic hypotension times in middle-aged adults. JAMA Intern Med. 2017 Sep 1;177(9):1316-23.

2 Prescribe antibiotics wisely

CLINICAL QUESTION: What is the incidence of antibiotic-associated adverse drug events (ADEs) among adult inpatients?

BACKGROUND: Antibiotics are used widely in the inpatient setting, although 20%-30% of inpatient antibiotic prescription are estimated to be unnecessary. Data are lacking on the rates of associated ADEs.

STUDY DESIGN: Retrospective cohort study.

SETTING: A single 1,194-bed academic tertiary medical center.

SYNOPSIS: Of the 5,579 patients admitted to four inpatient medicine services between September 2013 and June 2014, 1,488 (27%) received antibiotics for at least 24 hours. Patients were followed through admission and out to 90 days. A total of 324 unique antibiotic-associated ADEs occurred among 298 (20%) patients within 90 days of initial therapy. The overall rate of antibiotic-associated ADEs was 22.9/10,000 person-days. The investigators determined that 287 (19%) of antibiotic regimens were not clinically indicated, and among those, there were 56 (20%) ADEs. The most common 30-day ADEs were gastrointestinal, renal, and hematologic. The highest proportion of ADEs occurred with beta-lactams, fluoroquinolones, intravenous vancomycin, and trimethoprim-sulfamethoxazole, perhaps reflecting how commonly these agents are prescribed. Nearly all ADEs were considered clinically significant (97%). There were no deaths attributable to antibiotic-associated ADEs.

BOTTOM LINE: Antibiotic associated ADEs occur in about one in five inpatients, and about one in five antibiotic prescriptions may not be clinically indicated.

CITATION: Tamma PD et al. Association of adverse events with antibiotic use in hospitalized patients. JAMA Intern Med. 2017 Sep 1;177(9):1308-15.

Dr. Anderson is an associate program director in the internal medicine residency training program at the University of Colorado School of Medicine and a hospitalist at the VA Eastern Colorado Health Care System in Denver.

By Kinnear Theobald, MD

3 Rivaroxaban lowers cardiovascular risk but increases bleeding risk

CLINICAL QUESTION: Is rivaroxaban alone or in combination with aspirin more effective than is aspirin alone in preventing cardiovascular events in patients with stable atherosclerotic disease?

BACKGROUND: Previous studies have shown that, among patients with stable atherosclerosis, anticoagulation with a vitamin-K antagonist (VKA) plus aspirin is superior to aspirin alone for secondary prevention but has increased rates of major bleeding.

STUDY DESIGN: Randomized controlled trial.

SETTING: 602 sites in 33 countries.

SYNOPSIS: In 27,395 patients with stable atherosclerotic disease, the addition of 2.5 mg rivaroxaban twice daily to aspirin therapy reduced the rates of cardiovascular death, stroke, or nonfatal MI, at the cost of increased major bleeding rates. The authors found a 1.3% absolute risk reduction in recurrent cardiovascular events, but a 1.2% absolute increase in major bleeding rates, although intracranial and fatal bleeding rates were similar between the two groups. The trial was stopped early for efficacy, which may overestimate the treatment effect. In addition, much of the benefit in the rivaroxaban-plus-aspirin group was driven by lower rates of ischemic stroke. Rates of myocardial infarction were not significantly different between the groups. The addition of rivaroxaban to aspirin for secondary prevention should be individualized and considered in patients at high risk for ischemic stroke with low bleeding risk.

Dr. Theobald

BOTTOM LINE: Rivaroxaban plus aspirin lowers ischemic event rates in stable atherosclerosis compared to aspirin but increases major bleeding rates. Cost efficacy is uncertain.

CITATION: Eikelboom JW et al. Rivaroxaban with or without aspirin in stable cardiovascular disease. N Engl J Med. 2017 Oct 5. doi: 10.1056/NEJMoa1709118.

4 Triple therapy in question

CLINICAL QUESTION: In patients with nonvalvular atrial fibrillation undergoing percutaneous coronary intervention (PCI), is dabigatran plus a P2Y12 inhibitor safer than, and as efficacious as, triple therapy with warfarin?

BACKGROUND: Recent studies have shown that patients on long-term anticoagulation who undergo PCI can be managed on oral anticoagulants and P2Y12 inhibitors with lower bleeding rates than do those who receive triple therapy.

STUDY DESIGN: Randomized, controlled trial.

SETTING: 414 sites in 41 countries.

SYNOPSIS: In 2,725 patients with nonvalvular atrial fibrillation undergoing PCI, low-dose (110 mg, twice daily) and high-dose (150 mg, twice daily) dabigatran plus a P2Y12 inhibitor lowered absolute bleeding risk by 11.5% and 5.5%, respectively, compared with triple therapy. Rates of thrombosis, death, and unexpected revascularization as a composite endpoint were noninferior to triple therapy for both dabigatran doses studied. In patients on dabigatran for atrial fibrillation, it is reasonable to continue dabigatran and add a single P2Y12 inhibitor (clopidogrel or ticagre-

CONTINUED ON PAGE 42

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References: 1. Pappas PG et al. *Clin Infect Dis*. 2016;62(4):e1-e50.
2. Patterson TF et al. *Clin Infect Dis*. 2016;63(4):e1-e60.

astellas

PEDIATRIC HM LITERATURE | By Sam Stubblefield, MD

Dr. Stubblefield is a pediatric hospitalist at Nemours/Alfred I. duPont Hospital for Children in Wilmington, Del., and clinical assistant professor of pediatrics at Jefferson Medical College in Philadelphia.

Optimal rate of flow for high-flow nasal cannula in young children

CLINICAL QUESTION: Is there an optimal rate of flow for high-flow nasal cannula in respiratory distress?

BACKGROUND: High-flow nasal cannula (HFNC) has been increasingly used to treat children with moderate to severe bronchiolitis, both in intensive care unit settings and on inpatient wards. Studies have shown it may allow children with bronchiolitis to avoid ICU admission and intubation. In preterm infants it has been shown to decrease work of breathing. No prior studies, however, have examined optimizing the rate of flow for individual patients, and considerable heterogeneity exists in choosing initial HFNC flow rates.

Reliably measuring effort of breathing has proved challenging. Placing a manometer in the esophagus allows measurement of the pressure-rate product (PRP), a previously validated measure of effort of breathing computed by multiplying the difference between maximum and minimum esophageal pressures by the respiratory rate.[1] An increasing PRP indicates increasing effort of breathing. The authors chose systems from Fisher & Paykel and Vapotherm for their testing.

STUDY DESIGN: Single-center prospective observational trial.

SETTING: 24-bed pediatric intensive care unit in a 347-bed urban free-standing children's hospital.

SYNOPSIS: A single center recruited patients aged 37 weeks corrected gestational age to 3 years who were admitted to the ICU with respiratory distress. Fifty-four patients met inclusion criteria and 21 were enrolled and completed the study. Prior data suggested a sample size of 20 would be sufficient to identify a clinically significant effect size. Median age was 6 months.

Thirteen patients had bronchiolitis, three had pneumonia, and five had other respiratory illnesses. Each patient received HFNC delivered by both systems in sequence with flow rates of 0.5, 1, 1.5, and 2 L/kg per minute to a maximum of 30 L/min. Following the trials, patients remained on HFNC as per usual care with twice-daily PRP measurements until weaned off HFNC.

A dose-dependent relationship existed between flow and change in PRP, with the greatest reduction in PRP at 2 L/kg per minute flow (P less than .001) and a slightly smaller but similar reduction in PRP at 1.5 L/kg per minute. When the subjects were stratified by weight, this effect was not statistically significant for patients heavier than 8 kg ($P = .38$), with all significant changes being in patients less than 8 kg (P less than .001) with a median drop in PRP of 25%. Further examination of age and weight revealed that the greatest reduction in PRP was in the lightest patients (less than 5 kg).

Given the similarity in drop in PRP at 1.5 L/kg per minute and 2 L/kg per minute, the authors suggest this flow rate yields a plateau effect and minimal further improvement would be seen with increasing flow rates. A rate of 2 L/kg per minute was chosen as a maximum a priori as it was judged the highest level of HFNC patients could tolerate without worsening agitation or air leak. There was no difference seen between the two HFNC systems in the study. The authors did not report the fraction of inspired oxygen settings used, the size of HFNC cannulas, or how PRP changed over several days as HFNC was weaned.

BOTTOM LINE: The optimal HFNC rate to decrease effort of breathing for children less than 3 years old is between 1.5 and 2 L/kg/min with the greatest improvement expected in children under 5 kg.

CITATION: Weiler T et al. The Relationship Between High Flow Nasal Cannula Flow Rate and Effort of Breathing in Children. The Journal of Pediatrics. October 2017. doi: 10.1016/j.jpeds.2017.06.006.

REFERENCE

1. Argent AC, Newth CJL, Klein M. The mechanics of breathing in children with acute severe croup. Intensive Care Med. 2008;34(2):324-32. doi: 10.1007/s00134-007-0910-x.

lor) but not aspirin after PCI. In patients at high risk for bleeding complications, it may be reasonable to dose reduce the dabigatran from 150 mg twice daily to 110 mg twice daily before starting antiplatelet therapy, although the study was underpowered to examine this.

BOTTOM LINE: In patients with atrial fibrillation undergoing PCI, dabigatran plus clopidogrel or ticagrelor had lower bleeding rates and was noninferior with respect to the risk of thromboembolic events when compared with triple therapy with warfarin.

CITATION: Cannon CP et al. Dual antithrombotic therapy with dabigatran after PCI in atrial fibrillation. N Engl J Med. 2017 Oct 19. doi: 10.1056/NEJMoa1708454.

Dr. Theobald is a hospitalist at the University of Colorado School of Medicine.

By Matthew Hoegh, MD

5 Brief preoperative score predicts postoperative complications in the elderly

CLINICAL QUESTION: Can a geriatric assessment scale, performed by nonphysician surgical staff, be used to predict postoperative complications in the elderly?

BACKGROUND: Elective operations have become increasingly more common in the elderly. This population is at a higher risk for postsurgical complications. Previous research into preoperative risk assessment relied on geriatricians, of whom there is a national shortage.

STUDY DESIGN: Prospective cohort study.

SETTING: Preoperative surgery clinics at the University of Michigan Health System.

SYNOPSIS: A total of 736 elderly patients had a preoperative Vulnerable Elders Surgical Pathways and Outcomes Assessment (VESPA) administered by a surgical physician assistant in clinic. VESPA assessed activities of daily living, history of falling or gait impairment, and depressive symptoms. Patients underwent a Mini-Cog examination and a Timed Up and Go assessment. Patients were asked whether they expected they could manage themselves alone after discharge. One in seven patients reported difficulty with one or more of the activities of daily living and one in three stated they would be unable to manage postoperative self-care alone. Overall, 25.3% of patients had geriatric or surgical complications. The VESPA score predicted postoperative complications (area under the curve, 0.76). More specifically, preexisting difficulties with activities of daily living, anticipated self-care difficulty, a Charlson Comorbidity score of 2 or greater, male sex, or higher surgical relative value units were all independently associated with postoperative complications.

Dr. Hoegh

BOTTOM LINE: Elderly patients at an increased risk of postoperative complications can be identified by nonphysician staff using the VESPA preoperative assessment.

CITATION: Min L et al. Estimating risk of postsurgical general and geriatric complications using the VESPA preoperative tool. JAMA Surg. 2017 Aug 2. doi: 10.1001/jamasurg.2017.2635.

6 Risk-stratification tool predicts severe hypoglycemia

CLINICAL QUESTION: Can a clinical tool be developed to predict severe hypoglycemia in at-risk patients with type 2 diabetes (T2D)?

BACKGROUND: Severe hypoglycemia caused by glucose-lowering medications is a known public health and patient safety issue. Identifying patients with T2D at risk of severe hypoglycemia might facilitate interventions to offset that risk.

STUDY DESIGN: Prospective cohort.

SETTING: Kaiser Permanente Northern California (derivation and internal validation cohort); Veterans Affairs Diabetes Epidemiology Cohort and Group Health Cooperative (external validation cohorts).

SYNOPSIS: Through EHR data, 206,435 eligible patients with T2D were randomly split into derivation (80%) and internal validation (20%) samples. EHR data were reviewed for preselected clinical risk factors for hypoglycemia with a primary outcome of ED visit or hospital admission with a primary diagnosis of hypoglycemia over the ensuing year. A predictive tool was built based on six variables: prior hypoglycemia episodes, number of ED encounters for any reason in the prior year, insulin use, sulfonylurea use, presence of severe or end-stage kidney disease, and age. Predicted 12-month risk was categorized as high (greater than 5%), intermediate (1%-5%) or low (less than 1%). In the internal validation sample, 2.0%, 10.7%, and 87.3% of patients were categorized as high, intermediate, and low risk, respectively. Observed 12-month hypoglycemia-related health care utilization rates were 6.7%, 1.4%, and 0.2%, respectively. The external validation cohorts performed similarly.

BOTTOM LINE: A simple tool using readily available data can be used to estimate the 12-month risk of severe hypoglycemia in patients with T2D.

CITATION: Karter AJ et al. Development and validation of a tool to identify patients

with type 2 diabetes at high risk of hypoglycemia-related emergency department or hospital use. JAMA Intern Med. 2017 Oct 1;177(10):1461-70.

7 NSAIDs reduce spinal pain but are not "clinically important"

CLINICAL QUESTION: Are nonsteroidal anti-inflammatory drugs effective at reducing neck and low back pain?

BACKGROUND: Although neck and low back pain are leading causes of pain and disability, there is no consensus first-line pharmacologic therapy for treatment. Recent research has pointed to acetaminophen as being ineffective, which – in combination with increased awareness of opioid dependency and adverse risks – could lead to greater use of NSAIDs.

STUDY DESIGN: Systematic review and meta-analysis.

SETTING: Randomized controlled trials.

SYNOPSIS: Researchers used MEDLINE, EMBASE, CINAHL, CENTRAL, and LILACS to select 35 randomized, placebo-controlled trials evaluating the impact of NSAIDs on reducing spinal pain and disability from a total of 302 full-text articles. Trial data were pooled based on follow-up time and outcomes. Pain and disability outcomes were converted to a 100-point scale with a 10-point difference between groups defined as "clinically important." NSAIDs were found to offer greater pain reduction than placebo in the immediate (number needed to treat, 5; 95% confidence interval, 4-6) and short (NNT, 6; 95% CI, 4-10) range. However, this effect did not meet the specified 10-point difference to support "clinical importance," despite having favorable numbers needed to treat. Limited corresponding safety analysis did not find significant adverse event rate differences other than increased reporting of gastrointestinal symptoms.

BOTTOM LINE: NSAIDs reduce spinal pain, compared with placebo, with low numbers needed to treat, but nevertheless were not determined to have a "clinically important" effect.

CITATION: Machado GC et al. Nonsteroidal anti-inflammatory drugs for spinal pain: A systematic review and meta-analysis. Ann Rheum Dis. 2017 Jul;76(7):1269-78.

Dr. Hoegh is a hospitalist at the University of Colorado School of Medicine.

By Bryan Lublin, MD, MPH

8 Cost transparency fails to affect high-cost medication utilization rates

CLINICAL QUESTION: Does cost messaging at the time of ordering reduce prescriber use of high-cost medications?

BACKGROUND: Overprescribing expensive medications contributes to inpatient health care expenditures and may be avoidable when low-cost alternatives are available.

STUDY DESIGN: Retrospective, observational analysis of a quality improvement project.

SETTING: Single center, 1,145-bed, tertiary-care academic medical center.

SYNOPSIS: Nine medications were chosen by committee to be targeted for intervention: intravenous voriconazole, IV levetiracetam, IV levothyroxine, IV linezolid, IV eculizumab, IV pantoprazole, IV calcitonin, inhaled ribavirin, and IV mycophenolate. The costs for these nine medications plus lower-cost alternatives were displayed for providers in the order entry system after about 2 years of baseline data had been collected. There was no change in the number of orders or ordering trends for eight of the nine high-cost medications after the intervention. Only ribavirin was ordered less after cost messaging was implemented (16.3 fewer orders per 10,000 patient-days). Lower IV pantoprazole use (73% reduction), correlated with a national shortage unrelated to the study intervention, a potential confounder. Data on dosing frequency and duration were not collected.

Dr. Lublin

BOTTOM LINE: Displaying medication costs and alternatives did not alter the use of these nine high-cost medications.

CITATION: Conway SJ et al. Impact of displaying inpatient pharmaceutical costs at the time of order entry: Lessons from a tertiary care center. J Hosp Med. 2017 Aug;12(8):639-45.

CONTINUED ON FOLLOWING PAGE

SHORT TAKES

Pacing in syncope for select patients only

The 2017 ACC/AHA/HRD guideline for syncope evaluation and management concludes that the evidence does not yet support the use of pacing for reflex-mediated except among those with both recurrent vasovagal syncope and asystole documented by implantable loop recorder.

CITATION: Varosy P et al. Pacing as a treatment for reflex-mediated (vasovagal, situational, or carotid sinus hypersensitivity) syncope: A systematic review for the 2017 ACC/AHA/HRS guideline for the evaluation and management of patients with syncope. J Am Coll Cardiol. 2017 Aug 1;20(5):664-79.

9 U.S. hospitalists estimate significant resources spent on defensive medicine

CLINICAL QUESTION: What percent of inpatient health care spending by hospitalists can be attributed to defensive medicine?

BACKGROUND: Defensive medicine contributes an estimated $45 billion to annual U.S. health care expenditures. The prevalence of defensive medicine among hospitalists is unknown.

STUDY DESIGN: Survey of U.S.-based hospitalists.

SETTING: National survey sent to 1,753 hospitalists from all 50 states identified through the Society of Hospital Medicine database of members and meeting attendees.

SYNOPSIS: The survey contained two primary topics: an estimation of defensive spending and liability history. The hospitalists, who had an average of 11 years in practice, completed 1,020 surveys. Participants estimated that defensive medicine accounted for 37.5% of all health care costs. Decreased estimate rates were seen among VA hospitalists (5.5% less), male respondents (36.4% vs. 39.4% for female), non-Hispanic white respondents (32.5% vs. 44.7% for other) and having more years in practice (decrease of 3% for every 10 years in practice). One in four respondents reported being sued at least once, with higher risk seen in those with greater years in practice. There was no association between liability experience and perception of defensive medicine spending. Differences between academic and community settings were not addressed. Because only 30% of practicing hospitalists are members of SHM, it may be difficult to generalize these findings.

BOTTOM LINE: Hospitalists perceive that defensive medicine is a major contributor to inpatient health care expenditures.

CITATION: Saint S et al. Perception of resources spent on defensive medicine and history of being sued among hospitalists: Results from a national survey. J Hosp Med. 2017 Aug 23. doi: 10.12788/jhm.2800.

Dr. Lublin is a hospitalist at the University of Colorado School of Medicine.

By Joseph A. Simonetti, MD, MPH

10 Rural residents admitted for opioid overdoses increasingly are hospitalized in urban hospitals

CLINICAL QUESTION: Is there an association between rurality and trends and characteristics of hospitalizations for opioid overdose?

BACKGROUND: Hospitalization for an opioid overdose is an opportunity for intervention, and patients may have different discharge needs depending on their rurality. Differences in patient characteristics or overall trends in opioid overdose hospitalizations by rural status have not been described.


Dr. Simonetti

STUDY DESIGN: Time trend (2007-2014) and cross-sectional analysis (2012-2014).

SETTING: Nationally representative sample of U.S. hospital discharges.

SYNOPSIS: Using weighted data from the National Inpatient Sample and the American Community Survey, the authors found that 43,935 individuals were hospitalized for opioid overdose in the United States in 2007, increasing to 71,280 in 2014. A total of 99% of urban and 37% of rural residents were admitted to urban hospitals. Hospitalization rates for prescription opioid overdoses were higher among rural residents and increased among rural and urban residents until 2011 before declining among rural residents during 2012-2014. Hospitalization rates for prescription opioid overdoses increased among all groups before they declined among large urban population residents after 2011, declined among rural residents after 2012, and continued to rise among small urban residents. Hospitalization rates for heroin overdose increased across all years in all groups and were higher among urban as compared to rural residents.

BOTTOM LINE: Opioid overdose hospitalization is associated with patient rurality and a significant proportion of rural individuals are hospitalized for opioid overdose in urban facilities. These patients may have distinct discharge needs.

CITATION: Mosher H et al. Trends in hospitalization for opioid overdose among rural compared to urban residents of the United States, 2007-2014. J Hosp Med. 2017. doi: 10.12788/jhm.2793.

11 Checklists to improve patient safety have mixed results

CLINICAL QUESTION: Do checklists improve patient safety among hospitalized patients?

BACKGROUND: Systematic reviews of nonrandomized studies suggest checklists may reduce adverse events and medical errors. No study has systematically reviewed randomized trials or summarized the quality of evidence on this topic.

STUDY DESIGN: Systematic review of randomized controlled trials (RCTs) with pooled estimates of 30-day mortality.

SETTING: RCTs reporting inpatient safety outcomes.

SYNOPSIS: A search among four databases from inception through 2016 yielded nine studies meeting inclusion criteria. Checklists included tools for daily rounding, discharge planning, patient transfer, surgical safety and infection control procedures, pharmaceutical prescribing, and pain control. Three studies examined 30-day mortality, three studied length of stay, and two reported checklist compliance. Five reported patient outcomes and five reported provider-level outcomes related to patient safety. Findings regarding the effectiveness of checklists across

SHORT TAKES

Postoperative opioids often underutilized

Between 67% and 92% of patients report postoperative opioid oversupply, defined as filled but unused opioid prescriptions or unfilled opioid prescriptions. Half of the filled prescriptions were unused, with the majority reporting that the narcotics were not stored in locked containers.

CITATION: Bicket MC et al. Prescription opioid analgesics commonly unused after surgery: A systematic review. JAMA Surg. 2017 Aug 2. doi: 10.1001/jamasurg.2017.0831

5-hour protocol for contrast allergy safe and effective

Observational study showing a 5-hour IV steroid protocol was noninferior to a traditional 13-hour oral premedication regimen in patients at high risk for IV contrast reactions.

CITATION: Mervak BM et al. Intravenous corticosteroid premedication administered 5 hours before CT, compared with a traditional 13-hour oral regimen. Radiology. 2017 Nov;285(2): 425-33.

Poor food intake and chills predict true bacteremia in hospitalized patients

Observational study showing that poor food consumption had a sensitivity of 93.7% and shaking chills a specificity of 95.1% in diagnosing true bacteremia based on blood culture results.

CITATION: Komatsu T et al. A simple algorithm for predicting bacteremia using food consumption and shaking chills: a prospective observational study. J Hosp Med. 2017 Jul;12(7),510-5.

Lower readmission rates do not lead to increased postdischarge mortality at 30 days

Post–Affordable Care Act reductions in 30-day hospital risk-adjusted readmission rates for heart failure, acute MI, and pneumonia among Medicare beneficiaries did not increase but were weakly associated with decreased 30-day post–hospital discharge risk-adjusted mortality.

CITATION: Dharmarajan K et al. Association of changing hospital readmission rates with mortality rates after hospital discharge. JAMA. 2017Jul 18;318(3):270-8.

studies were mixed. A random-effects model using pooled data from the three studies assessing 30-day mortality showed lower mortality associated with checklist use (odds ratio, 0.6, 95% confidence interval, 0.41-0.89; *P* = .01). The methodologic quality of studies was assessed as moderate. The review included studies with substantial heterogeneity in checklists employed and outcomes assessed. Though included studies were supposed to have assessed patient outcomes and not the processes of care, several studies cited did not report such outcomes.

BOTTOM LINE: Evidence regarding the effectiveness of clinical checklists on patient safety outcomes is mixed, and there is substantial heterogeneity in the types of checklists employed and outcomes assessed.

CITATION: Boyd JM et al. The impact of checklists on inpatient safety outcomes: A systematic review of randomized controlled trials. J Hosp Med. 2017 Aug;12:675-82.

12 Contrast nephropathy after computed tomography

CLINICAL QUESTION: Do rates of acute kidney injury (AKI), renal replacement therapy (RRT), or mortality differ between adults receiving contrast-enhanced computed tomography (CT) versus those receiving noncontrast CT?

BACKGROUND: Published estimates regarding the risk of postcontrast complications are highly variable and recent data show that the risk of postcontrast AKI may be lower than previously suggested.

STUDY DESIGN: Systematic review and meta-analysis.

SETTING: Noninterventional studies assessing differences in AKI, new RRT, or mortality among adults who received contrast-enhanced CT, compared with those receiving noncontrast CT.

SYNOPSIS: A search among six databases and Google Scholar from inception through 2016 yielded 28 observational studies meeting inclusion criteria that included 107,335 participants. Twenty-six assessed AKI, 13 assessed need for RRT, and 9 assessed all-cause mortality. Compared with noncontrast CT, contrast-enhanced CT was not significantly associated with AKI (odds ratio, 0.94; 95% confidence interval, 0.83-1.07), RRT (OR, 0.83; 95% CI 0.59-1.16), or all-cause mortality (OR, 1.0; 95% CI 0.73-1.36). The overall risk of bias ranged from low to serious among the included studies. Studies were observational in nature, they were conducted in multiple settings (for example, ICU, emergency department), and the baseline characteristics of included patients were highly variable.

BOTTOM LINE: This meta-analysis observed no difference in adverse events between patients receiving contrast-enhanced CT versus those receiving noncontrast CT but should be interpreted with caution given the observational nature of the studies and differing characteristics of the included patients and study settings.

CITATION: Aycock RD et al. Acute kidney injury after computed tomography: a meta-analysis. Ann Emerg Med. 2017 Aug 12. doi: 10.1016/j.annemergmed.2017.06.041 TH

Dr. Simonetti is a hospitalist at the University of Colorado School of Medicine.

NEWS | Clinical developments, health care policy, and regulations

Opioid management protocol lowered trauma patient pain medication use

A targeted pain management protocol for trauma patients addressed the problem of overprescribing of opioids

By Eli Zimmerman
Frontline Medical News

AT THE AAST ANNUAL MEETING

BALTIMORE – A pain management protocol implemented in a trauma service reduced opioid intake in trauma patients while improving patient satisfaction, according to a retrospective study.

The opioid epidemic continues to grow every day, partly as a result of irresponsible overprescribing of opioid medication, according to Jessica Gross, MB BAO BCh, FACS, a trauma surgeon from Wake Forest (N.C.) Baptist Health at the American Association for the Surgery of Trauma annual meeting. Dr. Gross and her colleagues developed a pain management protocol (PMP) to provide adequate pain control while using fewer opioids in the postdischarge setting. They tested their PMP through a retrospective chart review of 498 patients admitted to the trauma service between January 2015 and December 2016, half of which were admitted before the PMP was initiated and half of which were admitted afterward.

The PMP involved a stepped approach to treating pain, with acetaminophen or ibuprofen as needed for mild pain, one 5-mg tablet of oxycodone/acetaminophen every 6 hours for moderate pain, two tablets for severe pain, and 50-100 mg of tramadol every 6 hours for breakthrough pain.

Counseling services for patients who were found to be in danger of substance use were provided in the hospital, and at discharge, patients received a weaning plan for their medication, according to Dr. Gross.

If the short-acting medications were found to be inadequate to control pain, patients were given slow-release pain medication as needed.

Average total medication, including at discharge and for refills, prescribed after PMP initiation was 1,242 morphine milligram equivalents (MME), compared with 2,421 MME prior to the protocol (*P* less than .0001).

> "By having a comprehensive pain management protocol, we can reduce the amount of pain medications we prescribe for outpatient use, from discharge from the trauma service."

After the protocol was implemented, Dr. Gross and her colleagues found the number of patients prescribed a refill dropped from 39.7% to 28.1%, with the size of those refills dropping from 1,032 MME to 213 MME on average.

"By having a comprehensive pain management protocol, we can reduce the amount of pain medications we prescribe for outpatient use, from discharge from the trauma service," said Dr. Gross. "Additionally, we have shown that, by having a protocol in place, we not only decreased the number of refills we were providing, but also the amount of pain medications that was prescribed within these refills."

Through a Press Ganey survey analysis of patients during the month before and the month after the PMP implementation, investigators found a significant increase in patient satisfaction and overall pain management, according to Dr. Gross,

In addition, the main trauma floor where the PMP was implemented was recognized for the most improvement in overall hospital rating and pain management, compared with the previous year.

Discussant Oscar Guillamondegui MD,FACS, medical director of the trauma ICU at Vanderbilt University, Nashville, Tenn., acknowledged the importance of PMPs and the work investigators presented.

"I would consider this the next generation of ERAS [enhanced recovery after surgery], or ERAT [enhanced recovery after trauma] in pain perception modification," said Dr. Guillamondegui. "Dr. Gross and the multidisciplinary group at Wake Forest have provided compelling evidence to help alleviate [the opioid epidemic]."

In a question-and-answer session following the presentation, attendees voiced concern over how a PMP would be used among patients who are more familiar with hospital systems, in particular concerning self-reported pain levels.

"Most of us employed at acute care centers are not working in utopia. Many of our patients are heroin addicts, are very bright, and know how to identify 10 on those silly smiley faces so that they get more medicine," said Charles Lucas, MD, FACS, professor of surgeon at Wayne State University, Detroit. Dr. Lucas also pointed out that, even when patients report false levels of pain, doctors still are required to put it into the electronic medical record for fear of repercussions,

In response, Dr. Gross said doctors on the floor reviewed patients to make sure they were receiving all doses of pain medications. If doctors felt the patient's pain regimen was adequate, despite the patient reporting otherwise, no changes were made.

Certain limitations include not being able to confirm whether patients received prescription medication elsewhere, nor any concrete data on patient satisfaction after discharge other than an inference based on fewer refills and lower refill MME.

Investigators reported no relevant financial disclosures.

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Andrei Malov/Thinkstock

Abnormal potassium plus suspected ACS spell trouble

By Bruce Jancin
Frontline Medical News

AT THE ESC CONGRESS 2017

BARCELONA – A serum potassium level of at least 5.0 mmol/L or 3.5 mmol/L or less at admission for suspected acute coronary syndrome is a red flag for increased risk of in-hospital mortality and cardiac arrest, according to a Swedish study of nearly 33,000 consecutive patients.

That's true even if, as so often ultimately proves to be the case, the patient turns out not to have ACS, Jonas Faxén, MD, of the Karolinska Institute, Stockholm, reported at the annual congress of the European Society of Cardiology.

"This study highlights that, if you have a patient in the emergency department with a possible ACS and potassium imbalance, you should really be cautious," Dr. Faxén said.

He reported on 32,955 consecutive patients admitted to Stockholm County hospitals for suspected ACS during 2006-2011 and thereby enrolled in the SWEDEHEART (Swedish Web System for Enhancement and Development of Evidence-Based Care in Heart Disease Evaluated According to Recommended Therapies) registry.

Overall in-hospital mortality was 2.7%. In-hospital cardiac arrest occurred in 1.5% of patients. New-onset atrial fibrillation occurred in 2.4% of patients. These key outcomes were compared between the reference group – defined as patients with an admission serum potassium of 3.5 to less than 4.0 mmol/L – and patients with an admission serum potassium above or below those cutoffs.

In a multivariate logistic regression analysis adjusted for 24 potential confounders, including demographics, presentation characteristics, main diagnosis, comorbid conditions, medications on admission, and estimated glomerular filtration rate, patients with a serum potassium of 5.0 to less than 5.5 mmol/L were at 1.8-fold increased risk of in-hospital mortality. Those with a potassium of 5.5 mmol/L or greater were at 2.3-fold increased risk.

In contrast, a low rather than a high serum potassium was an independent risk factor cardiac arrest. An admission potassium of 3.0 to less than 3.5 mmol/L carried a 1.8-fold increased risk of in-hospital cardiac arrest, while a potassium of less than 3.0 was associated with a 2.7-fold increased risk.

A serum potassium below 3.0 mmol/L at admission also was associated with a 1.7-fold increased risk of new-onset atrial fibrillation.

These elevated risks of bad outcomes didn't differ significantly between patients with ST-elevation MI, non-STEMI ACS, and those whose final diagnosis was not ACS, Dr. Faxén noted.

Session cochair David W. Walker, MD, medical director of the East Sussex (England) Healthcare NHS Trust, observed, "When I was a junior doctor I was always taught that when patients came onto coronary care we had to get their potassium to 4.5-5.0 mmol/L. I think you might want to change that advice now."


Bruce Jancin/Frontline Medical News

Jonas Faxén, MD, of the Karolinska Institute in Stockholm

"This study highlights that, if you have a patient in the emergency department with a possible ACS and potassium imbalance, you should really be cautious."

"The implication would be that, if you intervene quickly in a patient with an abnormal potassium level, you might make a difference. Clearly, a potassium that's too high is much worse than too low, since patients with in-hospital cardiac arrest can often be resuscitated," Dr. Walker commented.

Dr. Faxén reported having no financial conflicts regarding his study, which was funded by the Swedish Heart and Lung Foundation and the Stockholm County Council.

bjancin@frontlinemedcom.com

LVAD use soars in elderly Americans

By Mitchel L. Zoler
Frontline Medical News

AT THE HFSA ANNUAL SCIENTIFIC MEETING

DALLAS – The percentage of left ventricular assist devices placed in U.S. heart failure patients at least 75 years of age jumped sharply during 2003-2014, and concurrently the short-term survival of these patients improved dramatically, according to data collected by the National Inpatient Sample.

During the 12-year period examined, the percentage of left-ventricular assist devices (LVADs) placed in U.S. heart failure patients aged 75 years and older rose from 3% of all LVADs in 2003 to 11% in 2014, Aniket S. Rali, MD, said at the annual scientific meeting of the Heart Failure Society of America.

In actual numbers, LVAD placement into elderly patients jumped from 23 in 2003 to 405 in 2014, a greater than 17-fold increase. During the same period, total U.S. LVAD use rose from 726 placed in 2003 to 3,855 placed in 2014, about a fivefold increase.

The U.S. national numbers also showed that, throughout the period studied, elderly U.S. patients who received an LVAD were increasingly sicker, with steadily increasing numbers of patients with a Charlson Comorbidity Index score of four or greater. Despite this, in-hospital mortality rates of elderly patients receiving an LVAD plummeted, dropping from 61% of elderly LVAD recipients in 2003 to 18% in 2014. During the same time, the percentage of elderly patients with a Charlson Comorbidity Index score greater than four doubled from 33% in 2003 to 66% in 2014, said Dr. Rali, a cardiologist at the University of Kansas Medical Center in Kansas City.

"If the Charlson Comorbidity Index score is increasing but in-hospital mortality is decreasing, then increased LVAD use is not a bad trend," Dr. Rali said in an interview. He hopes that future analysis of longitudinal data from patients could identify clinical factors that link with better patient survival and help target LVAD placement to the patients who stand to gain the most benefit.

"We may be able to give these elderly patients not just longer life but improved quality of life" by a more informed targeting of LVADs, he suggested. "I think these numbers will help convince people that all is not lost," he noted, for elderly heart failure patients who receive an LVAD as destination therapy. Patients at least 75 years old are not eligible for heart transplantation, so when these patients receive an LVAD it is, by definition, destination therapy.

The data also showed a marked sex disparity in LVAD use, with LVAD placement in men at least 75 years old rising from 1.4/1,000 patients in 2003 to 2.78/1,000 patients in 2014. In contrast, among women these rates rose from 0.8/1,000 patients in 2003 to 1.36/1,000 patients in 2014.

Frontline Medical News

Aniket S. Rali, MD, of the University of Kansas Medical Center, Kansas City

The average age for elderly U.S. LVAD recipients for the entire 12-year period studied was 77.6 years among a total of 2,090 recipients. For all 21,323 U.S. LVAD recipients during 2003-2014 the average age was 51.5 years old.

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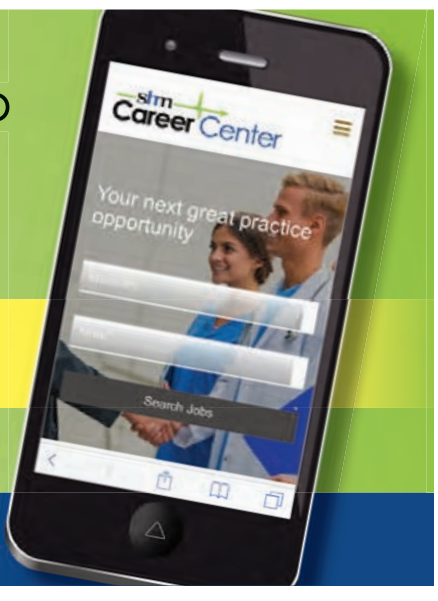

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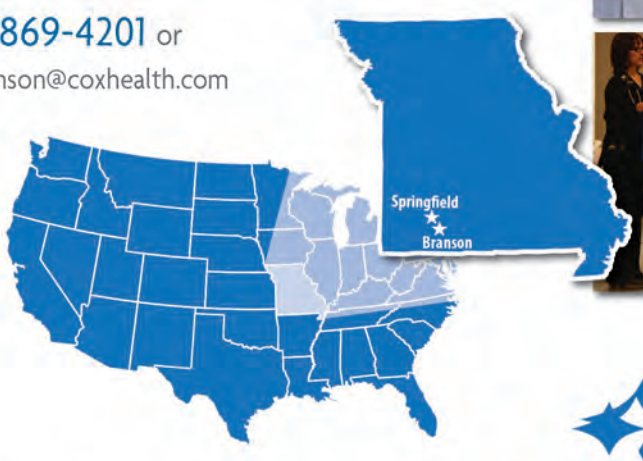

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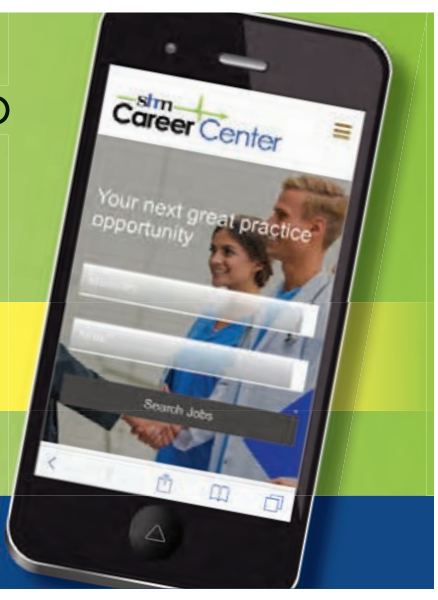

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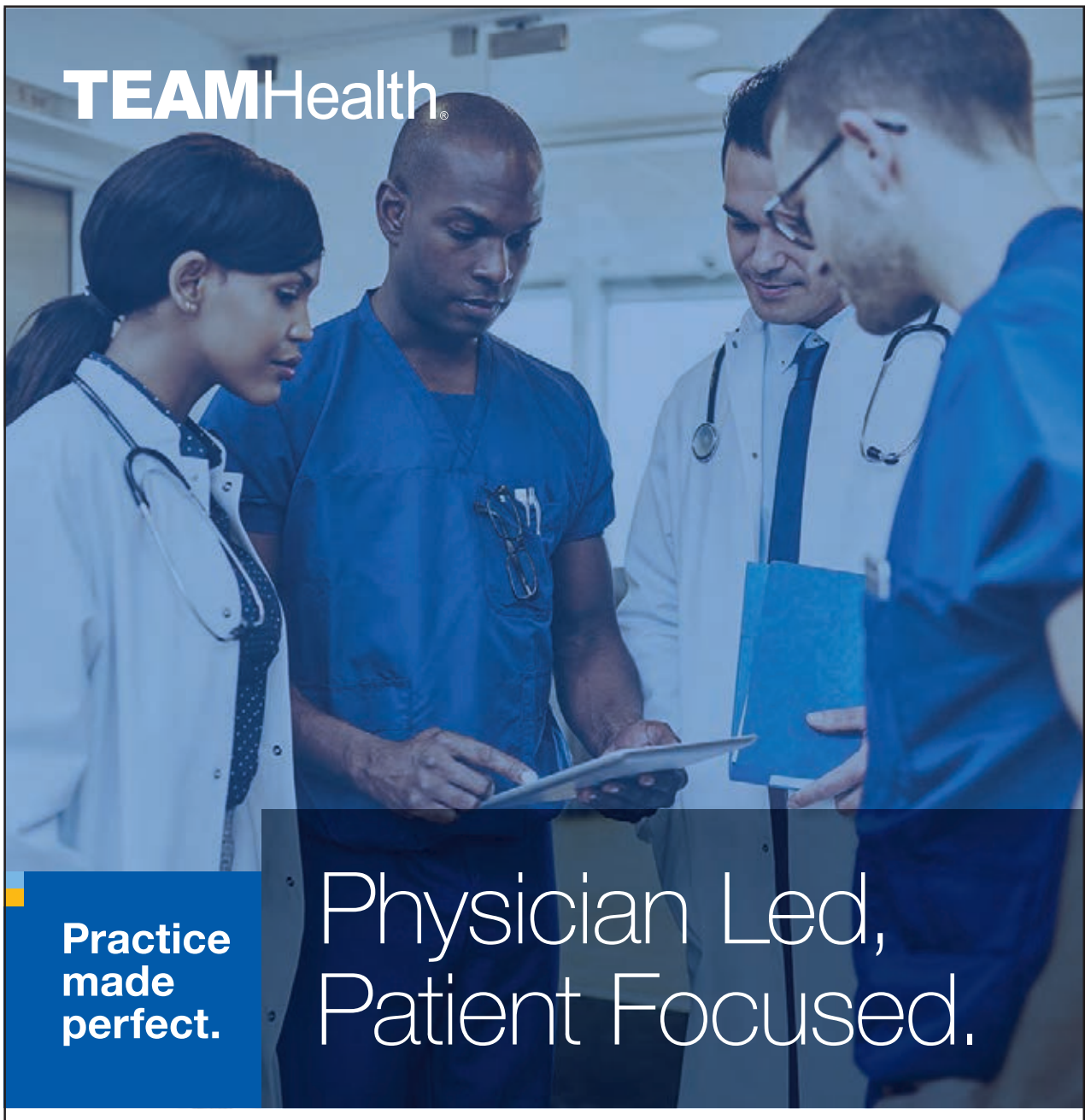

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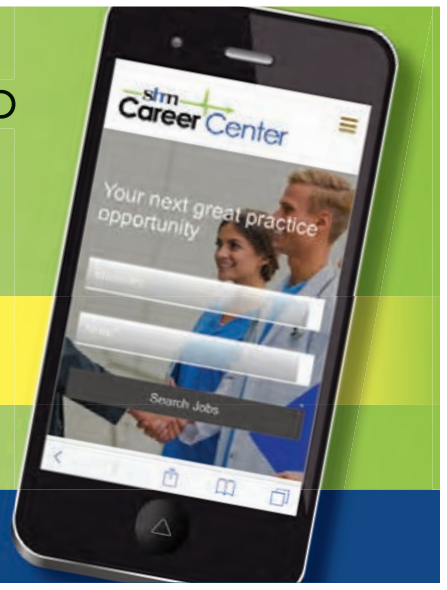

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Choosing location after discharge wisely

A novel, important skill for the inpatient team

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By Win Whitcomb, MD, MHM

Of all the care decisions we make during a hospital stay, perhaps the one with the biggest implications for cost and quality is the one determining the location to which we send the patient after discharge.

Yet ironically, we haven't typically participated in this decision, but instead have left it up to case managers and others to work with patients to determine discharge location. This is a missed opportunity, as patients first look to their doctor for guidance on this decision. Absent such guidance, they turn to other care team members for the conversation. With a principal focus on hospital length of stay, we have prioritized when patients are ready to leave over where they go after they leave.

Discharge location has a large impact on quality and cost. The hazards of going to a post-acute facility are similar to the hazards of hospitalization – delirium, falls, infection, and deconditioning are well-documented adverse effects. We may invoke the argument that, all things being equal, a facility is safer than home. Yet, there is scant evidence supporting this assertion. At the same time, when contemplating a home discharge, a capable caregiver is often in short supply, and patients requiring assistance may have few options but to go to a facility.

In terms of cost during hospitalization and for the 30 days after discharge, for common conditions such as pneumonia, heart failure, chronic obstructive pulmonary disease, or major joint replacement, Medicare spends nearly as much on post-acute care – home health, skilled nursing facilities, inpatient rehabilitation, long-term acute care hospitals – as for hospital care.[1] Further, an Institute of Medicine analysis showed that geographic variation in post-acute care spending is responsible for three-quarters of all variation in Medicare spending.[2] Such variation raises questions about the rigor with which post-acute care decisions are made by hospital teams.

Perhaps most striking of all, hospitalist care (versus that of traditional primary care providers) has been associated with excess discharge rates to skilled nursing facilities, and savings that accrue under hospitalists during hospitalization are more than outweighed by spending on care during the post-acute period.[3]

All of this leads me to my point: Hospitalists and inpatient teams need a defined process for selecting the most appropriate discharge location. Such a location should ideally be the least restrictive location suitable for a patient's needs. In the box at right, I propose a framework for the process. The domains listed in the box should be evaluated and discussed by the team, with early input and final approval by the patient and caregiver(s). The domains listed are not intended to be an exhaustive list, but rather to serve as the basis for discussion during discharge team rounds.

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Identifying patient factors informing an optimal discharge location may represent a new skill set for many hospitalists and underscores the value of collaboration with team members who can provide needed information. In April, the Society of Hospital Medicine published the Revised Core Competencies in Hospital Medicine. In the Care of the Older Patient section, the authors state that hospitalists should be able to "describe post-acute care options that can enable older patients to regain functional capacity."[4] Inherent in this competency is an understanding of not only patient factors in post-acute care location decisions, but also the differing capabilities of home health agencies, skilled nursing facilities, inpatient rehabilitation facilities, and long-term acute care hospitals. TH

References

1. Mechanic R. Post-acute care – the next frontier for controlling Medicare spending. N Engl J Med. 2014;370:692-4.

2. Newhouse JP, et al. Geographic variation in Medicare services. N Engl J Med. 2013;368:1465-8.

3. Kuo YF, et al. Association of hospitalist care with medical utilization after discharge: evidence of cost shift from a cohort study. Ann Intern Med. 2011;155(3):152-9.

4. Nichani S, et al. Core Competencies in Hospital Medicine 2017 Revision. Section 3: Healthcare Systems. J Hosp Med. 2017 April;12(1):S55-S82.

Framework for selecting appropriate discharge location

Patient Independence
- Can the patient perform activities of daily living?
- Can the patient ambulate?
- Is there cognitive impairment?

Caregiver Availability
- If the patient needs it, is a caregiver who is capable and reliable available? If so, to what extent is s/he available?

Therapy Needs
- Does the patient require physical, occupational, or speech therapy?
- How much and for how long?

Skilled Nursing Needs
- What, if anything, does the patient require in this area? For example, a new PEG tube, wound care, IV therapies, etc.

Social Factors
- Is there access to transportation, food, and safe housing?

Home Factors
- Are there stairs to enter the house or to get to the bedroom or bathroom?
- Has the home been modified to accommodate special needs? Is the home inhabitable?