April 2018
Volume 22 | No. 4

The Hospitalist

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Courtesy University of Chicago Medicine

Closing the gender gap

Hospitalists address inequity in medicine

By Kelly April Tyrrell

It wasn't something she planned to have happen but about 2 years ago, Vineet Arora, MD, MAPP, MHM, became what she calls an "accidental advocate" for gender parity in medicine.

"I was asked to review a paper around gender pay," the University of Chicago Medical Center hospitalist said. "It was stunning to me just how different salaries were – between male and female physicians – even when the authors were attempting to control for various factors."

That paper was published in JAMA in September 2016 by researchers at Harvard Medical School and Massachusetts General Hospital (MGH), both in Boston. It found that, even after adjustment for age, experience, specialty, faculty rank, research productivity, and clinical revenue, female physicians at 24 public medical schools in 12 states earned nearly $20,000 less per year than did their male colleagues.[1]

Dr. Arora wrote an editorial to accompany that 2016 paper in JAMA, and in September 2017, she and her colleague at the University of Chicago, Jeanne Farnan, MD, MHPE, coauthored another piece in Annals of Internal Medicine titled,

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Do hospitalists improve outcomes?

Insights from *The Hospital Leader* blog

By Danielle Scheurer, MD, MSCR, SFHM

Long continues the debate on what impact hospitalists have on inpatient outcomes. This issue has been playing out in the medical literature for 20 years, since the coining of the term in 1997. In a recent iteration of the debate, a study was published in JAMA Internal Medicine entitled "Comparison of hospital resource use and outcomes among hospitalists, primary care physicians, and other generalists."


Dr. Scheurer

The study retrospectively evaluated health care resources and outcomes from more than a half-million Medicare beneficiaries hospitalized in 2013 for 20 common diagnosis-related groups, by type of physician provider (hospitalist, their primary care physician, or other generalist). The study found that nonhospitalists used more consultations and had longer lengths of stays, compared with hospitalists. In addition, relative to hospitalists, PCPs were more likely to discharge patients to home, had similar readmission rates, and lower 30-day mortality rates, but generalists were less likely to discharge patients home, had higher readmission rates, and higher mortality rates.

This study makes a compelling argument that longitudinal contact with patients may translate into different care patterns and outcomes (e.g. length of stay, discharge disposition, and even mortality). Importantly, this study was the first to distinguish between PCPs familiar with patients versus generalists without prior familiarity in the outpatient setting. However, the authors do acknowledge that, as with any observational study design, unmeasured confounders could contribute to the results, and they call for further research to understand the mechanisms by which PCPs may achieve better outcomes. Given that this patient population used Medicare (and the average age was 80 years old), it may very well be that having deep historical knowledge of such a patient population is required to produce better outcomes.

> *"It is paramount that we use all available resources to gain a deep understanding of the patient."*

As hospitalists, we need to understand and acknowledge that most of our patients are "brand new" to us, and it is paramount that we use all available resources to gain a deep understanding of the patient in as short a time as possible. For example, ensuring all medical records available are reviewed, at least as much as possible, including a medical list (including a medication reconciliation). Interviewing family members or caregivers is also obviously a "best practice." As well, having the insight of the PCP in these patients' care is unquestionably good for us, for the PCP, and for the patient.

With good communication processes and an eye for excellence in care transitions, hospitalists can and should achieve the best outcomes for all of their patients. I look forward to more research in this arena, including a better understanding of the mechanisms by which we can all reliably produce excellent outcomes for the patients we serve.

Read the full post at hospitalleader.org.

Also on *The Hospital Leader* ...

- Locums vs. F/T hospitalists: Do temps stack up? by Brad Flansbaum, DO, MPH, MHM
- Rounds: Are we spinning our wheels? by Vineet Arora, MD, MAPP, MHM
- Up your game in APP integration by Tracy Cardin, ACNP-BC, SFHM

THE Hospitalist

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Q&A

PAs evolving in hospital medicine

Meredith Wold, PA-C, pushes the status quo with like-minded clinicians

By Felicia Steele

This month, *The Hospitalist* spotlights Meredith K. Wold, PA-C, APC supervisor, hospital medicine and critical care, at Regions Hospital in St. Paul, Minn., and adjunct faculty, Augsburg University physician assistant program. Ms. Wold is a long-time member of SHM and the recipient of this year's Clinical Excellence Award for Nurse Practitioners and Physician Assistants.

How did you first hear of SHM, and why did you decide to become a member?

I've always recognized the importance of engaging in a community beyond my daily practice. Shortly after starting my career in hospital medicine, I quickly recognized this was a belief shared and cultivated by my hospital medicine group as well. Our HM group at HealthPartners has a long history of SHM participation. As our advanced practice clinician (APC) group grew, I knew engagement at the national level was critical to ensure that our ongoing evolution was supported, sustained, and shared.

What does it mean to you to receive SHM's Clinical Excellence Award for nurse practitioners and PAs?

Being awarded the SHM Clinical Excellence Award is remarkable. I work alongside really amazing people, and I strive toward the exceptionally high bar they set. I'm passionate and committed to hospital medicine, and I'm very grateful this is appreciated.

Which SHM conferences have you attended?

The first SHM annual conference I attended was in 2008 in sunny San Diego. I'd been a physician assistant for barely a year. I remember being so energized by the passion and commitment of the speakers and attendees. I harnessed that energy and spent the next several years being part of a growing APC group at Regions Hospital in St. Paul, Minn., where our HM group holds partnership and innovation at its core. You can imagine my excitement when I was asked to speak about APC practice models at HM16. Fellow APC Emily Thornhill Davis and I spoke to a standing-room only audience! Emily and I partnered again as faculty at HM17. I look forward to being part of a panel discussion at HM18.

Ms. Wold

Closer to home, I've taken advantage of phenomenal opportunities hosted by our local chapter of SHM. My colleagues Benji Mathews, MD, and Kreegan Reierson, MD, have led Point-of-Care Ultrasound (POCUS) training courses regionally and nationally. Their comprehensive, hands-on course ensured that I had the foundation to incorporate portable ultrasound into my practice.

Given the tremendous clinical growth I have absorbed through local and national SHM offerings, I look forward to my leadership and operations skills being bolstered at SHM's Leadership Academy this fall in Vancouver. As APCs hold more and more vital roles within HM groups, it's integral that, along the way, our leadership skills are recognized and honed as well.

As an SHM member of more than 10 years, what has been most valuable for you as a PA?

Networking, sharing ideas, pushing the status quo with other like-minded clinicians from around the country is invigorating. Because of SHM, I have an APC network from coast to coast – a lattice of clinicians that are linked by dedication and enthusiasm to hospital medicine.

What advice do you have for early-career PAs in HM?

Find an HM group whose culture allows and supports your growth as an APC. In an exemplary HM model, the delegated autonomy of an APC should widen and deepen over time. Seek out a team that appreciates the importance of this evolution.

Challenging dogma: Postop fever

By Raj Sehgal, MD, FHM

The dogma

During our medical school and residency years, many of us learned the "Rule of W" as a helpful mnemonic for causes of postoperative fever: Wind (pulmonary causes, including atelectasis), Water (urinary tract infection), Wound (infection), Walking (deep venous thrombosis), and Wonder Drugs (drug fever). Classic teaching has been that noninfectious causes predominate during the first 48 hours postop, with infectious diseases taking over after that. Atelectasis also is very common in the immediate postoperative period, seen in up to 90% of patients by postoperative day 3, and is often taught as the primary cause of fever in the immediate postoperative period.[1,2] But is this backed up by the evidence?

The evidence

A 2011 systematic review looked at the association between atelectasis and fever. Eight studies involving 998 postoperative patients were included, with the majority of cases being postcardiac or abdominal surgeries. Seven of the eight studies failed to show a significant association between early postoperative fever (EPF) and atelectasis; in the one "positive" study, atelectasis was assessed only once on postop day 4. The authors of the review concluded that "there is no clinical evidence suggesting that atelectasis is a major cause of early EPF".[3] A subsequent study of postoperative fever in pediatric patients showed similar negative results.[4] This begs the question – does atelectasis cause fever at all? Likely not. In an animal study from 1963, experimentally induced atelectasis resulted in fever, but the fever appeared secondary to infectious causes (i.e., pneumonia in the affected lung) and resolved with antibiotic administration.[5] It seems more likely that EPF is caused by other factors, such as the increase in pyrogenic cytokines seen in the postoperative period.[3]

Dr. Sehgal

So, what should the new generation of medical students and residents be taught? In an article reviewing complications seen in a cohort of more than 600,000 surgical patients, the authors proposed a new "Rule of W" to reflect the most frequent postoperative complications, in order of timing: Waves (myocardial infarction), Wind (pneumonia), Water (urinary tract), Wound (infection), and Walking (deep venous thrombosis).[6]

Takeaway

Atelectasis and early postoperative fever are both commonly seen after surgery, but the relationship appears to be simply an association, not causal. The "Rule of W" can be an effective mnemonic for the causes of postop fever – just make sure you use the updated version.

Dr. Sehgal is clinical associate professor of medicine, division of hospital medicine, South Texas Veterans Health Care System and University of Texas Health Sciences Center at San Antonio. He is a member of the editorial advisory board for The Hospitalist.

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A public health approach to gun violence

Hospitalists have a role to play

By Kelly April Tyrrell

In 2014, 33,594 people were killed by firearms in the United States. More than 21,000 of these deaths were suicides. The rest were primarily homicides and accidental shootings. Meanwhile, firearm deaths represented nearly 17% of injury deaths that year.[1,2]

In a 2015 Perspective published in the New England Journal of Medicine, author Chana Sacks, MD, pointed out that 20 children and adolescents are sent to the hospital daily for firearm injuries and 2,000 people each year suffer gunshot-related spinal cord injuries and "become lifelong patients."[3]

Dr. Hemenway

At the same time, Federal Bureau of Investigation data show that the number of active shooter situations rose between 2000 and 2013, with an average of 6.4 incidents a year for the first 7 years of the study, conducted in 2013, and an average of 16.4 in the last 7 years of the study. More than 1,000 people were wounded or killed across 160 active shooter incidents, defined as an individual or individuals actively engaged in killing or trying to kill people in a populous area.[4]

"Gun violence is undeniably a public health issue," said Dr. Sacks, a hospitalist at Massachusetts General Hospital (MGH) and a vocal proponent of addressing firearms in the public health sphere. Her cousin's 7-year-old son, Daniel Barden, was fatally shot at Sandy Hook Elementary School in Newtown, Conn., in December 2012.

Yet, the notion of firearm injuries and deaths as a public health issue is, in America, an issue of contention. How can hospitalists and other health care providers avoid wading into the political thicket while also looking out for their patients?

For one, it's not the only controversial issue with which providers are confronted, Dr. Sacks and others say. From taking sexual histories and counseling patients about abortion and adoption to discussing end-of-life issues, clinicians may routinely face uncomfortable interactions in the name of patient care.

"It's not a question about their right to a weapon; it's about how individuals can stay as safe as possible and keep their families as safe as possible," said Dr. Sacks, who also wrote in a January 2017 opinion for the American Medical Association that: "Counseling about gun safety is not political – no more so than a physician counseling a patient about cutting down on sugary beverages is an act of declaring support for New York City's attempted ban on large-sized sodas."[5]

This idea is echoed by David Hemenway, PhD, director of the Harvard Injury Control Research Center (HICRC). "You can talk about wearing your seat belt without advocating for mandatory seat belt laws," he said.

Yet in a 2014 survey of internist members of the American College of Physicians, only 66% of respondents said they believed physicians have the right to counsel patients on gun violence prevention and 58% said they never ask patients about guns in their home. That same survey showed the public is also split: While two-thirds of respondents said it was at least sometimes appropriate for providers to ask about firearms during a visit, one-third believed it was never appropriate.[6]

In fact, Barbara Meyer, MD, MPH, a family physician in Seattle, said she once had a patient walk out of the office when he encountered a question about firearms on the intake forms for the health system at which she was employed at the time. Today, at NeighborCare Health, the presence of firearms in the home is a question in the well-child electronic health record.

The HICRC runs a campaign called Means Matter, designed to address suicide by firearm, the most common method of suicide in America. The campaign – backed by decades of some of the best research available – reports that people die of suicide by gun more than all other methods combined, that suicide attempts using a firearm are almost always fatal, and that firearms used by youths who commit suicide almost always belong to a parent.

"Suicide is often an impulsive act," said Dr. Sacks, which means preventing access to firearms for patients at risk can be a matter of life and death. "There is potential for intervention there … what can be more clearly medical than suicide prevention?"

For her, that means eliminating the partisan component and equipping providers with evidence-based research and best practices. Reliable studies show that having guns at home increases the danger to families, said Dr. Hemenway, and places with fewer guns and stronger gun laws are correlated with fewer gun fatalities.[7,8]

"In accordance with guidelines and the best evidence out there, we should be screening patients who might be at risk for gun violence," he said. "In some cases, interventions can be as simple and straightforward as informing patients where to get gun locks and talking to them about how to store firearms safely."

At MGH, Dr. Sacks helped found the Gun Violence Prevention Coalition, an interdisciplinary group of physicians, nurses, physical therapists, and others committed to raising awareness and preparing providers to address gun violence. She believes strongly that physicians can act locally to help address the issue.

In Seattle, Dr. Meyer has been involved with a local group called Washington Ceasefire. The group has recently begun advocating for smart guns, which are designed to be fired only by an authorized user.

Indeed, Dr. Hemenway said research by his group suggests 300,000-500,000 guns are stolen every year, though he points out that we know almost nothing about "who, what, when, why, and where." That's largely because of an effective ban on gun violence research, enacted by Congress in the 1990s.[9]

Gun violence affects not just those shot and killed by firearms, but also those affected by the trauma it can leave in its wake. Dr. Sacks recounts a recent visit to MGH by survivors of the Pulse Nightclub shooting in Orlando, Fla., which took place on June 12, 2016.

"It was a moving, intense event where we all sat around and talked about this issue," Dr. Sacks said. "The number of people dying is horrific enough, but it's not just that. Here were a number of young people who survived and yet whose lives will never be the same. We are undercounting the number of people affected by gun violence."

Studies also estimate the cost of medical care related to gun violence to be roughly $620 million per year, averaging between $9,000 and $18,000 per patient in 2014.[10]

Despite some arguments to the contrary, addressing gun violence as a public health issue is not a distraction from other important public health issues such as opioid abuse. "It is entirely a false choice that we must only take on one issue or another," Dr. Sacks said.

Nor should efforts to address gun violence focus only on individuals, said Dr. Hemenway, who told the Harvard T.H. Chan School of Public Health in October 2017 that: "A lesson from public health is that it is usually more effective to change the environment than to try to change people. The U.S. should use the same harm reduction approach to gun violence that it uses to treat other public health threats."

The issue must be reframed, said Dr. Sacks. "If we can find a way to act and intervene and lower [the] number [of people affected by gun violence], what could be more fundamentally in line with what we try to do every day as physicians?"

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HOSPITALIST EMPLOYMENT MODELS: WHICH FITS YOU BEST?

HOSPITALISTS ARE ENJOYING A FAVORABLE EMPLOYMENT MARKET.

As a job seeker, you might be tempted to snag the best-paying opportunity. But there's another factor you should consider: culture. Each employment model has cultural benefits and limitations that will significantly impact your day-to-day practice. Below are the four major types to consider.

BY SURINDER YADAV, MD
Vice President

Hospital Employee

Many hospitals directly employ hospitalists in hopes of fostering physician alignment with their administrative goals.

For most of us, this is the most familiar model and the one we experienced during residency. Its attractions include defined benefits with predictable schedules and workloads. The hospital also assumes responsibility for billing, risk management, and staffing. As a result, its physicians have relatively little administrative burden.

This model has potential downsides. For one, clinical autonomy is limited. Directives affecting the practice often come from the top down. This can squelch engagement and limit opportunities for career development. In this model, highly motivated physicians may find themselves working alongside those who only do the minimum for productivity requirements.

Company Employee

When it comes to designing hospital medicine programs, management companies often have a greater depth and breadth of experience than hospital leaders. They can bring expertise, fresh ideas, and best practices to the table.

Being employed by a management company has some of the same perks as working directly for a hospital, including predictable schedules and benefits. Most also offer practice management services, though the level of support varies.

Individual physicians employed in this model have very little voice in practice matters. In some large companies, the top clinical leaders oversee an enormous number of physicians and practice locations. Even if they are in touch with the needs of the front-line hospitalists, they may be spread too thin to offer meaningful support. In addition, some physicians find corporate culture at odds with clinical practice.

Independent Contractor

Self-employment is another option. Physicians following this model work as independent contractors for hospitals and practice management companies.

Independent contractors can choose long- or short-term jobs, take breaks between assignments, and increase their workload to boost earnings. On the downside, these physicians have fewer opportunities to innovate or create change.

Physician Partner

Another model to consider is a physician partnership or independent group. These can be local, regional, or national. Vituity is one example of a national physician partnership.

Partnerships are practices in which all physicians have the opportunity to become owners. Finances are transparent, and physician owners share profits as well as responsibility for success.

This model fosters cooperation among physicians, because everyone is motivated toward the same goal. This collaborative spirit can also cross service lines. For example, when a partnership staffs both the hospital and emergency medicine services, colleagues work together to facilitate admissions. Patients see everyone working together as one team, which is a great satisfier.

The partnership model is a good fit for physicians who want to be engaged in developing best practices and innovative protocols that fit the needs of their hospital and patient community.

Making the Right Decision

Salary is definitely an important consideration, but in the end, cultural fit will be the best predictor of your long-term career satisfaction.

Closing the gap

Continued from page 1

"Inpatient notes: Gender equality in hospital medicine – are we there yet?"[2]

In the 2017 paper, Dr. Arora and Dr. Farnan assessed recent studies documenting inequity in regard to compensation, discrimination concerning child-rearing, and gender disparities in medical leadership. They also discussed strategies that might improve the future outlook for female physicians.

"As I approach mid-career, I see these issues affecting my career and my colleagues' careers and I decided we need to be doing more work in this space," said Dr. Arora.

Fueling the conversation

When asked whether he thinks his research inspired the current conversation about gender inequity in medicine, Anupam Bapu Jena, MD, PhD – lead author of the September 2016 gender pay paper – said that while he did not initiate it, his work "has fueled the conversation."

"This is an issue that has been going on in the scientific literature for at least 25-30 years," said Dr. Jena, the Ruth L. Newhouse Associate Professor of Health Care Policy at Harvard Medical School and a physician in the department of medicine at MGH. "I am sure women in medicine have been feeling this since women entered medicine."

Many female hospitalists hoped that, because they were a part of a relatively new specialty, hospital medicine would avoid some of the time-worn challenges that women in other specialties faced.

"The birth of hospital medicine held the promise that, as a new field, it would be immune to the 'old boys' club mentality that plagues established specialties," Dr. Farnan and Dr. Arora wrote in their September 2017 Annals article. And yet, they continued, "gender disparities developed in the areas of leadership and academic productivity."

A 2015 study in the Journal of Hospital Medicine found that just 16% of university hospital medicine divisions were led by women, and women made up just 28% of those physicians leading general internal medicine divisions. Meanwhile, female hospitalists gave just 26% of presentations at national meetings, were first authors on only 33% of publications, and were senior authors on only 21% of manuscripts.[3]

"Hospital medicine has been a very male-dominated movement," said Dr. Farnan, associate professor of medicine at the University of Chicago. "Its leaders and giants are all men, so the idea that this was going to be breaking barriers was naiveté."

In addition, Dr. Farnan and Dr. Arora wrote in their review, another recent survey of female physicians – primarily internists – found that 36% reported discrimination based on pregnancy, maternity leave, or breastfeeding. This was – at least in part, Dr. Farnan said – because "physician-mothers were not present at the table when discussions were held about scheduling."

And while hospitalists have relatively flexible schedules, these same schedules can be unforgiving when it comes to traditional child care arrangements, Dr. Arora said.

But, there is hope, particularly within the Society of Hospital Medicine, Dr. Arora and Dr. Farnan wrote. The organization has seen an increase in female leadership – including its president-elect Nasim Afsar, MD, MBA, SFHM – and a board of directors that is split evenly between men and women. Mentorship of junior women also is on the rise, which allows opportunities for senior female physicians to teach younger women how to better negotiate and advocate for themselves.

"I think it has to come from both sides. Leadership does need to recognize that women may be less aggressive in their negotiating skills," said Dr. Farnan. "But I think there also needs to be some recognition by women that it is okay to ask for more money."

But it isn't all about money, she said. "It can be negotiating for anything important in career development, career opportunities, research opportunities." This also extends to schedule flexibility, training and more.

Leadership in hospitalist groups can help, Dr. Arora and Dr. Farnan wrote in their Annals article, by providing schedule flexibility, support for training, and structured on-boarding for new faculty. Citing efforts in other specialties such as cardiology and general surgery, female hospitalists may benefit from negotiation skills training, structured mentorship, and education in personal and professional development.

However, both physicians recognize the challenges of implicit bias and the threat of stereotypes that may confront many women. For example, women who exert more stereotypically "male" traits such as assertiveness and confidence, may face a "harsh likability penalty because they are going against gender norms," said Dr. Arora.

Being taken seriously

Expectations around gender norms also may affect relationships female doctors have with their patients. In a June 2017 Washington Post editorial, Faye Reiff-Pasarew, MD, describes being objectified as "cute" and "adorable" and not being taken seriously by her patients.[4]

"I'd had a number of interactions with patients that upset me," said Dr. Reiff-
Pasarew, assistant professor of hospital medicine, director of the humanism in medicine program, and unit medical director at Icahn School of Medicine at Mount Sinai, New York. "Later, I reflected upon them and realized that bias was a systemic problem. There needs to be a conversation among the broader medical community about the effect that these biases have on our patients and our practice."

In her editorial, Dr. Reiff-Pasarew explained that when a female physician is written off as too young or is not recognized as a physician, it can delay necessary care. She also touched on the challenge of earning the trust of hospitalized patients.

"There's a lot of evidence that the success of medical therapy is influenced by the context in which it is given, beyond mere adherence to a regimen or medication," Dr. Reiff-Pasarew said, noting that it is a result of "the very powerful placebo effect.

"If patients don't trust the care they are given, it can impact outcomes," she added. "There is a lot to being a hospitalist that is diagnostic, such as finding the correct diagnosis and implementing the appropriate treatment. However, beyond that, a huge part of this role is to be a knowledgeable caregiver, someone who guides a patient through the experience of being ill in a complex medical system. This requires immense trust."

Continued on following page

Blood transfusions are dropping in U.S. hospitals

By Jim Kling
Frontline Medical News

FROM JAMA / The number of red blood cell (RBC) and plasma transfusions conducted in U.S. hospitals has declined steadily since 2011, perhaps as a result of hospitals instituting new blood management programs after randomized trials showed the safety of restrictive transfusion strategies.

There has been no change in the frequency of platelet transfusions since 2011.

The researchers analyzed data from the National Inpatient Sample, using ICD-9-CM procedure codes to identify transfusion procedures. They examined the percentage of hospitalizations with one or more RBC transfusions, since these represent the majority of transfusions. Secondary outcomes included hospitalizations with one or more plasma or one or more platelet transfusions. The findings were published in a research letter in JAMA (2018 Feb 27;319[8]:825-7).

The study included data from the period of 1993-2014. The frequency of transfusions has trended upward since 1993, but a found an inflection point at 2011. The researchers then focused their analysis on the period from 2011 to 2014.

RBC transfusions occurred in 6.8% of hospitalizations in 2011 and dropped to 5.7% in 2014 (adjusted risk ratio, 0.83; 95% confidence interval, 0.78-0.88). The frequency of plasma transfusions dipped from 1.0% to 0.87% (aRR, 0.87; 95% CI, 0.80-0.95). There was no significant change in the frequency of platelet transfusions (aRR, 0.99; 95% CI, 0.89-1.10), an area in which there is little evidence to guide clinical practice.

The researchers found reductions in RBC transfusions among all sexes, race/ethnicities, patient risk severities, payer types, and admission types. They found no statistically significant reductions in RBC transfusions in private investor–owned hospitals or in patients under the age of 18 years, though they noted that there is limited evidence to guide clinical practice in the pediatric population.

The decline in RBC transfusions was greater for elective admissions (aRR, 0.74, 95% CI, 0.67-0.80) than it was for nonelective admissions (aRR, 0.86; 95% CI, 0.81-0.91; *P* for interaction less than .001).

"The observed decreases in RBC and plasma transfusions from 2011 to 2014 may reflect evidence demonstrating the safety of restricting RBC transfusions, patient blood management programs, conservation initiatives (e.g., cell salvage, pharmacotherapy, improved surgical techniques), advocacy from medical organizations, and publication of transfusion guidelines," the researchers wrote.

The study is limited by its retrospective design and may not be generalizable to outpatient settings.

The study was supported by grants from the National Institutes of Health and Cornell University, New York. Two of the study authors reported personal fees from Terumo BCT, Haemonetics, and Octapharma. No other disclosures were reported.

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As a physician trained in medical humanities, Dr. Reiff-Pasarew has found ways around this by listening to her patients and giving them the opportunity to share their stories when appropriate. This allows her to empathize with them and better guide their care. But, she acknowledges, she and most physicians often do not have time for this, particularly in the hospital setting. Still, Dr. Reiff-Pasarew and some of her colleagues will offer a career development workshop at HM18 on the approach, called "Challenging Patients, Challenging Stories: A Medical Humanities Approach to Provider Burnout."

Dr. Reiff-Pasarew also believes better mentoring and feedback opportunities would benefit female physicians and trainees. "I often see that equally knowledgeable female trainees and medical students are much more self-deprecating when presenting research," she said. "They give disclaimers that they don't know enough, while their male peers are more confident."

She is quick, however, not to blame women, largely because the same social pressures that Dr. Arora and Dr. Farnan acknowledged may have molded their behaviors. "I meet with residents to talk explicitly about situations in which they are treated inappropriately by patients or other staff," Dr. Reiff-Pasarew said. "We discuss how they might react in those situations in the future and how they can process these challenges."

Modern American culture equips men and women with "different essential skill sets," Dr. Reiff-Pasarew noted, but she suggested men and women can learn from one another. "We should be teaching men to be more empathetic listeners, a skill that is generally taught to girls. Similarly, we need to teach women confidence, a skill predominantly taught to boys."

Just as important, male clinicians should believe in and trust the experiences that women report having, Dr. Reiff-Pasarew said. "It's very difficult to understand the subtleties of how people are treated differently in patient interactions if you've never been in that situation."

Equal compensation for equal work

Ultimately, it is in the best interest of all physicians, their employers, and their patients to ensure female physicians are satisfied and fulfilled in their professions, said Dr. Jena, and that includes recognizing and rewarding their value.

"What I am trying to argue in my work is for equal pay – equal compensation for equal work," Dr. Jena said. "Man or woman, it's a good idea."

Dr. Jena, who is also a faculty research fellow at the National Bureau of Economic Research, said that when the contributions of a group of people are systematically undervalued, "you run the risk of having those individuals invest less in their career." In health care, he said, "if fewer women want to go into academic medicine because they know they are underpaid, what impact does it have on new ideas when you eliminate highly successful, intelligent people from a field?"

Dr. Jena and his colleagues authored a February 2017 study in JAMA Internal Medicine that showed hospitalized Medicare patients treated by female internists have lower 30-day mortality and readmissions rates, compared with those treated by male internists, including hospitalists. This included millions of hospitalizations and accounted for myriad confounders.[5]

"Here is evidence that women may be doing a modestly better job than men in terms of outcomes," Dr. Jena said. "If we are in the business of underpaying and underrewarding females, we are disincentivizing female physicians from entering the field and, in certain specialties, female physicians see better patient outcomes."

Dr. Arora and Dr. Farnan are optimistic that, as more studies like those by Dr. Jena and his colleagues are published – utilizing large data sets never before available, which account for many of the factors that have been used to justify pay and leadership disparities in the past – times will change for the better.

"There comes a time when everyone realizes a group has been wronged and it's time to right it. I think now is the time for women. It's tragic it's come so late, but I'm glad it's here," Dr. Arora said. "A lot of work is being done on the ground and in institutions to promote women leaders, to include women in search committees, and tp improve pay. These are always difficult discussions but now we can have transparency in salaries and we can we discuss them."

However, Dr. Arora also is concerned about blowback, particularly as issues of sexual harassment of women in the workplace finally emerge from the shadows. "The blowback may be that more people tiptoe around women and are more cautious around them," she said. "This could end up hurting women in the workplace. Something so deeply cemented like this doesn't die easily, and I think it requires culture change. I do think we're on that journey and starting to see things change."

But the real measure of that, said Dr. Farnan, will be when these conversations are no longer taking place.

"We will know we've achieved what we want to achieve when we don't have to discuss this anymore," she said. "We will know we've achieved parity when we stop talking about it."

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Key Clinical Question

How should asymptomatic hypertension be managed in the hospital?

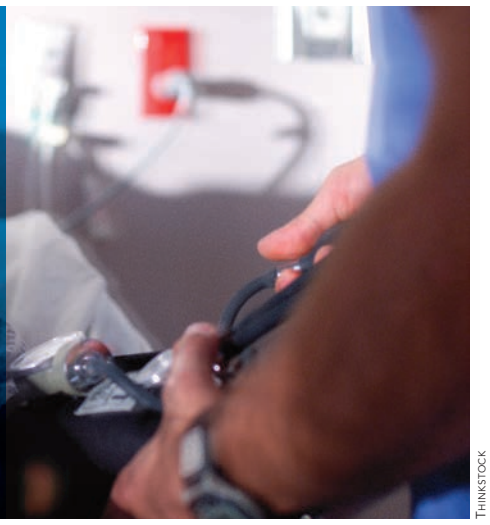
Prevalence of inpatient hypertension may be as high as 72%

By William C. Lippert, MD, MPH; Paula Bailey, MD, MHA; and Adam J. Gray, MD

Division of Hospital Medicine, University of Kentucky, Lexington

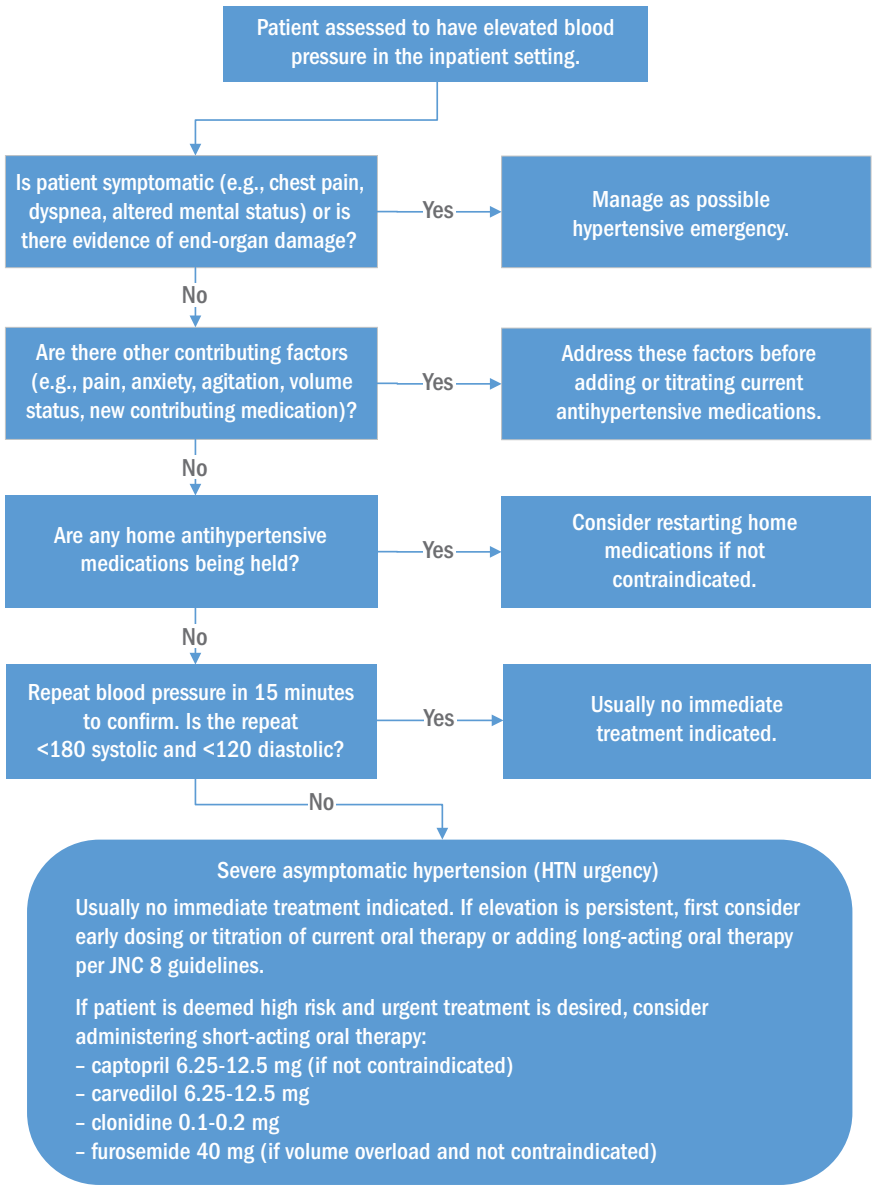
Clinical Case

A 62-year-old man with diabetes mellitus and hypertension presents with painful erythema of the left lower extremity and is admitted for purulent cellulitis. During the first evening of admission, he has increased left lower extremity pain and nursing reports a blood pressure of 188/96 mm Hg. He denies dyspnea, chest pain, visual changes, confusion, or severe headache.



THINKSTOCK

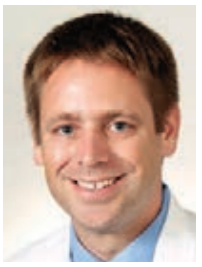
Figure 1. Management of inpatient hypertension



Background

The prevalence of hypertension in the outpatient setting in the United States is estimated at 29% by the National Health and Nutrition Examination Survey.[1] Hypertension generally is defined in the outpatient setting as an average blood pressure reading greater than or equal to 140/90 mm Hg on two or more separate occasions.[2] There is no consensus on the definition of hypertension in the inpatient setting; however, hypertensive urgency often is defined as a sustained blood pressure above the range of 180-200 mm Hg systolic and/or 110-120 mm Hg diastolic without target organ damage, and hypertensive emergency has a similar blood pressure range, but with evidence of target organ damage.[3]

Dr. Lippert



Dr. Gray

In general, the guidelines for the treatment of hypertension are focused on management of chronic hypertension in the outpatient setting and/or hypertensive emergency in the inpatient setting. However, there is no consensus on the treatment of nonemergent, asymptomatic hypertension, or hypertensive urgency in the inpatient setting. This is alarming since the prevalence of inpatient hypertension may be as high as 72%, which roughly equates to 26.2 million encounters per year.[4,5] It is hypothesized that the stress and complications of being acutely ill and 24-hour blood pressure monitoring likely contribute to the elevated prevalence.[4] Overall, the available evidence indicates that the recognition and appropriate treatment of hypertension in the inpatient setting is suboptimal due to the lack of guidelines and inconsistent management.[4,6]

The evidence

There are several clinical trials to suggest that the ambulatory treatment of chronic hypertension reduces the incidence of myocardial infarction, cerebrovascular accident (CVA), and heart failure[7,8]; however, these trials are difficult to extrapolate to acutely hospitalized patients.[6] Overall, evidence on the appropriate management of asymptomatic hypertension in the inpatient setting is lacking.

Some evidence suggests we often are overly aggressive with intravenous antihypertensives without clinical indications in the inpatient setting.[3,9,10] For example, Campbell et al. prospectively examined the use of intravenous hydralazine for the treatment of asymptomatic hypertension in 94 hospitalized patients.[10] It was determined that in 90 of those patients, there was no clinical indication to use intravenous hydralazine and 17 patients experienced adverse events from hypotension, which included dizziness/light-headedness, syncope, and chest pain.[10] They recommend against the use of intravenous hydralazine in the setting of asymptomatic hypertension because of its risk of adverse events with the rapid lowering of blood pressure.[10]

Lipari et al. found similar results in their analysis of 172 hospitalized patients who received intravenous antihypertensives for hypertension.[9] The majority who received an intravenous antihypertensive were asymptomatic and did not have a clinical indication.[9] Further, they reported that approximately 56 patients demonstrated blood pressure reductions of more than 25% within 6 hours of antihypertensive administration.[9] Of those, two suffered from a hypotensive event and six had a subsequent scheduled oral antihypertensive held.[9] They echoed similar recommendations of

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Campbell et al. that intravenous antihypertensive use in patients with asymptomatic hypertension should be avoided because of the risk of adverse events.[9]

Weder and Erickson performed a retrospective review on the use of intravenous hydralazine and labetalol administration in 2,189 hospitalized patients.[3] They found that only 3% of those patients had symptoms indicating the need for IV antihypertensives and that the length of stay was several days longer in those who had received IV antihypertensives.[3]

Other studies have examined the role of oral antihypertensives for management of asymptomatic hypertension in the inpatient setting. A systematic review and meta-analysis by Souza et al. assessed the use of oral pharmacotherapy for hypertensive urgency.[11] Sixteen randomized clinical trials were reviewed and it was determined that angiotensin-converting enzyme inhibitors (ACE-I) had a superior effect in treating hypertensive urgencies.[11] The most common side effect of using an ACE-I was a bad taste in patient's mouths, and

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Quiz

Asymptomatic hypertension in the hospital

Hypertension is a common focus in the ambulatory setting because of its increased risk for cardiovascular events. Evidence for management in the inpatient setting is limited but does suggest a more conservative approach.

Question: A 75-year-old woman is hospitalized after sustaining a mechanical fall and subsequent right femoral neck fracture. She has a history of hypertension and hyperlipidemia for which she takes amlodipine and atorvastatin. Her blood pressure initially on admission is 170/102 mm Hg, and she is asymptomatic other than severe right hip pain. Her amlodipine and atorvastatin are resumed. Repeat blood pressures after resuming her amlodipine are still elevated with an average blood pressure reading of 168/98 mm Hg. Which of the following would be the next best step in treating this patient?

A. A one-time dose of intravenous hydralazine at 10 mg to reduce blood pressure by 25% over next several hours.
B. A one-time dose of oral clonidine at 0.1 mg to reduce blood pressure by 25% over next several hours.
C. Start a second daily antihypertensive with lisinopril 5 mg daily.
D. Address the patient's pain.

The best answer is choice D. The patient's hypertension is likely aggravated by her hip pain. Thus, the best course of action would be to address her pain.

Choice A is not the best answer as an intravenous antihypertensive is not indicated in this patient as she is asymptomatic and exhibiting no signs/symptoms of end-organ damage.

Choice B is not the best answer as by addressing her pain it is likely her blood pressure will improve. Urgent use of oral antihypertensives would not be indicated.

Choice C is not the best answer as patient has acute elevation of blood pressure in setting of a right femoral neck fracture and pain. Her blood pressure will likely improve after addressing her pain. However, if there is persistent blood pressure elevation, starting long-acting antihypertensive would be appropriate per JNC 8 guidelines.

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researchers did not observe side effects that were similar as those seen with the use of IV antihypertensives.[11]

Further, Jaker et al. performed a randomized, double-blind prospective study comparing a single dose of oral nifedipine with oral clonidine for the treatment of hypertensive urgency in 51 patients.[12] Both the oral nifedipine and oral clonidine were extremely effective in reducing blood pressure fairly safely.[12] However, the rapid lowering of blood pressure with oral nifedipine was concerning to Grossman et al.[13] In their literature review of the side effects of oral and sublingual nifedipine, they found that it was one of the most common therapeutic interventions for hypertensive urgency or emergency.[13] However, it was potentially dangerous because of the inconsistent blood pressure response after nifedipine administration, particularly with the sublingual form.[13] CVAs, acute MIs, and even death were the reported adverse events with the use of oral and sublingual nifedipine.[13] Because of that, the investigators recommend against the use of oral or sublingual nifedipine in hypertensive urgency or emergency and suggest using other oral antihypertensive agents instead.[13]

With this literature in mind, we have developed our own practical approach for the treatment of inpatient asymptomatic hypertension (Figure 1) that is modeled closely to the approach created by Axon et al.[14] Once it is established that a hospitalized patient has elevated blood pressure, providers must assess for symptoms indicative of hypertensive emergency. If the patient has no symptoms of chest pain, dyspnea, altered mental status, severe headache, visual changes, or other evidence of acute end organ damage, then hypertensive emergency is unlikely. Thus, the next step is to assess for common contributing factors to hypertension, including acute pain, nausea, anxiety, or agitation; medication or illicit drug withdrawal; volume overload or depletion; or a new medication that may be contributing to the elevated blood pressure. If the blood pressure remains elevated, the provider should review the patient's home medication list to ensure that none of their antihypertensives were held on admission to the hospital. Often restarting a patient's home oral antihypertensive regimen is adequate to control blood pressure.

Typically, if the patient's blood pressure remains elevated despite these efforts, no urgent treatment is indicated and we recommend close monitoring of the patient's blood pressure during the hospitalization. If hypertension persists, the next best step would be to titrate a patient's current oral antihypertensive therapy or to start a long-acting antihypertensive therapy per the JNC 8 (Eighth Joint National Committee) guidelines. It should be noted that, in those patients that are high risk, such as those with known coronary artery disease, heart failure, or prior hemorrhagic CVA, a short-acting oral antihypertensive such as captopril, carvedilol, clonidine, or furosemide should be considered.

Back to the case

The patient's pain was treated with oral oxycodone. He received no oral or intravenous antihypertensive therapy, and the following morning, his blood pressure improved to 145/95 mm Hg. Based on our suggested approach in Figure 1, the patient would require no acute treatment despite an improved but elevated blood pressure. We continued to monitor his blood pressure and despite adequate pain control, his blood pressure remain persistently elevated. Thus, per the JNC 8 guidelines, we started him on a long-acting antihypertensive, which improved his blood pressure to 123/78 mm Hg at the time of discharge.

Bottom line

Management of asymptomatic hypertension in the hospital begins with addressing contributing factors, reviewing held home medications – and rarely – urgent oral pharmacotherapy.

Dr. Lippert is PGY-3 in the department of internal medicine at the University of Kentucky, Lexington. Dr. Bailey is associate professor of medicine at the University of Kentucky. Dr. Gray is associate professor of medicine at the University of Kentucky.

Key Points

- Evidence for treatment of inpatient asymptomatic hypertension is lacking.
- The use of intravenous antihypertensives in the setting of inpatient asymptomatic hypertension is inappropriate and may be harmful.
- A conservative approach for inpatient asymptomatic hypertension should be employed by addressing contributing factors and reviewing held home antihypertensive medications prior to administering any oral antihypertensive pharmacotherapy.

Additional Reading

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In the Literature

Physician reviews of HM-centric research

By Alisha Skinner, MD; Anna Maria Muñoa, MD; Hassan Rao, MD; Kimberly A. Indovina, MD; Rehaan Shaffie, MD; Nicholas Scaletta, MD; Sarah A. Stella, MD, FHM

Division of Hospital Medicine, Denver Health

IN THIS ISSUE

By Alisha Skinner, MD

1 Probiotics reduce the risk of *Clostridium difficile*–associated diarrhea in patients receiving antibiotics

CLINICAL QUESTION: Do probiotics prevent *Clostridium difficile*–associated diarrhea (CDAD) in adults and children receiving antibiotics?

BACKGROUND: Antibiotic use is associated with an increased risk of *C. difficile* infection. Multiple studies have investigated the effects of probiotics in reducing the risk of *C. difficile* infection with varied results. This meta-analysis aims to assess the efficacy and safety of probiotics in reducing the risk of CDAD in patients taking antibiotics.

STUDY DESIGN: Meta-analysis.

SETTING: A comprehensive electronic search for randomized, controlled trials investigating probiotics for prevention of CDAD or *C. difficile* infection were considered for inclusion. There were no language, publication status, or date limits applied.

SYNOPSIS: This meta-analysis included 31 trials (8,672 participants) evaluating the relationship between probiotics and CDAD. The outcomes were pooled using a random effects model to calculate risk ratios and 95% confidence intervals. A complete case analysis suggested that probiotics reduce the risk of CDAD by 60% (1.5% vs. 4.0%; relative risk, 0.40; 95% confidence interval, 0.3-0.52), although a post-hoc subgroup analysis showed a statistically significant benefit only among patients with a high CDAD baseline risk (greater than 5%). Adverse events were assessed in 32 trials (8,305 participants), and the pooled analysis indicated that probiotic use reduced the risk of adverse events by 17% (RR, 0.83; 95% CI, 0.71-0.97).

Limitations to this meta-analysis include missing data from patients lost to follow-up and lack of success in testing all fecal samples. Lastly, that the strongest data for the beneficial effects of probiotics were demonstrated in patients with a high baseline risk of developing CDAD limits the study's applicability to the general population.

Dr. Skinner

BOTTOM LINE: Probiotic use in immunocompetent patients undergoing treatment with antibiotics decreases the incidence of CDAD without an increase in adverse events.

CITATION: Goldenberg JZ et al. Probiotics for the prevention of *Clostridium difficile*–associated diarrhea in adults and children. Cochrane Database Syst Rev. 2017. doi: 10.1002/14651858.CD006095.pub4.

2 Long-acting bronchodilators increase CVD risk in certain COPD patients

CLINICAL QUESTION: Is the initiation of inhaled long-acting beta$_2$-agonist (LABA) or long-acting muscarinic antagonists (LAMA) in patients with chronic obstructive pulmonary disease (COPD) associated with increased cardiovascular disease (CVD) risk?

BACKGROUND: Long-acting inhaled bronchodilator use (LABA or LAMA) in patients with COPD is the mainstay of treatment. Prior studies have reported a possible interaction between LABA or LAMA use and increased rates of cardiovascular events; however, the results have been variable. The findings have been confounded by incomplete medical records, exclusion of patients with CVD in bronchodilator trials, and high patient drop out rates. This study aims to assess the association between LABA or LAMA use in patients with COPD and the risk of CVD.

STUDY DESIGN: Nested case control study.

SETTING: Taiwanese national database.

SYNOPSIS: This study included 284,200 LABA and LAMA naive patients who were aged 40 years or older and had COPD (mean age, 71.4 years); it retrieved health care claims data from 2007 through 2011 for these patients from the Taiwan National Health Insurance Research Database. During a mean follow-up of 2.0 years, 37,719 patients experienced a cardiovascular event, and 146,139 matched controls were identified. LABA or LAMA use was measured in the year preceding the cardiovascular event and stratified by duration since initiation of LABA or LAMA treatment. Logistical regression was performed to estimate the odds ratios of CVD from LABA and LAMA treatment. New LABA use was associated with a 1.50-fold (95% confidence interval, 1.35-1.67; *P* less than .001) increased cardiovascular risk within 30 days of initiation, and new LAMA use was associated with a 1.52 fold (95% CI, 1.28-1.80; *P* less than .001) increased risk. In patients with prevalent LABA or LAMA use, the risk of CVD was absent or reduced.

Key limitations included the omission of contributors to cardiovascular disease, including smoking status and alcohol consumption, in the final analysis. Also, the contribution of worsening COPD to cardiovascular events was not accounted for.

BOTTOM LINE: Initiation of inhaled LABAs or LAMAs in patients with COPD is associated with a 1.5-fold increased risk of cardiovascular disease – including emergency or inpatient care for coronary artery disease, heart failure, ischemic stroke, or arrhythmia – in the first 30 days.

CITATION: Wang MT et al. Association of cardiovascular risk with inhaled long-acting bronchodilators in patients with chronic obstructive pulmonary disease. JAMA Intern Med. 2018; 178(2):229-38.

Dr. Skinner is a hospitalist at Denver Health Medical Center and an assistant professor of medicine at the University of Colorado at Denver, Aurora.

By Anna Maria Muñoa, MD

3 Guidelines to optimize treatment of reduced ejection fraction heart failure

CLINICAL QUESTION: What guidance is there for clinical care of complex heart failure patients?

BACKGROUND: The prevalence of heart failure (HF) is escalating and consumes significant health care resources, inflicts significant morbidity and mortality, and greatly affects quality of life. There is a plethora of research, multiple medical therapies, devices, and care strategies that have been shown to improve outcomes in heart failure patients. Previous publications have reviewed evidence-based literature but left a gap in knowledge for those more-complex areas or lacked practical clinical guidance. This policy document was created to guide physicians in informed decision making in a directed decision pathway form.

Dr. Muñoa

STUDY DESIGN: Expert consensus guidelines.

SETTING: American College of Cardiology Task Force on Expert Consensus Decision Pathways.

SYNOPSIS: A multidisciplinary group of specialties including phy-

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sicians, nurses, pharmacists, epidemiologists, and patient advocacy groups addressed 10 pivotal issues in heart failure through literature review, expert consensus, and round table discussion.

Ten principles were identified and addressed:

- Initiating, adding, or switching to new evidenced-based guideline-directed therapy.
- Achieving optimal therapy using multiple HF drugs and therapies.
- Knowing when to refer a patient to an HF specialist.
- Addressing the challenges of care coordination for team-based HF treatment.
- Improving patient adherence.
- Managing specific patient cohorts, such as African Americans, older adults, and the frail.
- Managing your patients' cost of care for HF.
- Reducing costs and managing the increased complexity of HF.
- Managing the most common cardiac and noncardiac comorbidities.
- Integrating palliative care and transitioning patients to hospice care

BOTTOM LINE: Structured guidelines to provide practical and actionable recommendations to improve heart failure outcomes, integrate evidence-based medicine when available, and utilize expert conscious when evidence-based medicine is not available.

CITATION: Yancy CW et al. 2017 ACC expert consensus on decision pathway for optimizing of heart failure treatment: Answers to 10 pivotal issues about heart failure with reduced ejection fraction. J Am Coll Cardiol. 2018 Jan 16;71(2):201-30.

4 The hospitalist as intensivist

CLINICAL QUESTION: What roles, training, and support do hospitalists have and perceive in the intensive care unit?

BACKGROUND: There is a well-documented shortage of intensivists in the United States, which has left hospitalists to help fill the gap of care. Hospitalists, however, have varied levels of critical care knowledge and skills. In some regions, more than 80% of hospitalists deliver care in the ICU. It is unknown how much support hospitalized patients receive from board-certified critical care physicians.

STUDY DESIGN: Multistage cross-section survey.

SETTING: Web-based survey initially sent through the Critical Care Task Force professional networks and later sent to 4,000 hospitalists randomly selected from Society of Hospital Medicine's national electronic mailing list of 12,000 hospitalists.

SYNOPSIS: This study includes 425 responses, approximately 10% of those solicited. Compared with the annual SHM survey, this included more hospitalists from academic hospitals (24% vs. 14.8%) and fewer from nonteaching hospitals (41% vs. 58.7%). A total of 77% of responders provide care in the ICU, with 66% serving as the attending physician.

Rural and nonacademic hospitalists are more prevalent in the ICU (96% rural vs. 73% nonrural; 90% nonacademic vs. 67% academic), are more likely to serve as the primary physician for all or most ICU patients (85% rural vs. 62% nonrural; 81% nonacademic vs. 44% academic), and provide all critical care services (55% rural vs. 10% nonrural; 64% nonacademic vs. 25% academic).

Many rural (43%) and nonacademic (42%) hospitalists feel that they are expected to practice beyond their perceived scope of expertise at least some of the time, which was correlated with perceived difficulty in transferring patients to higher levels of care. About 90% of rural hospitalists report at least insufficient support from board-certified intensivists. Of all responders in the study, 85% indicated interest in additional critical care training in some form, short of fellowship training.

BOTTOM LINE: Most hospitalists provide care in the ICU, however hospitalists provide critical care at significantly higher rates in rural and nonacademic hospital settings.

SHORT TAKES

Association between hospitalist years of experience and mortality in hospitalized patients

Cohort study showed that Medicare patients cared for by hospitalists in their first year of practice experienced higher in-hospital and 30-day mortality, compared with patients cared for by hospitalists in their second year of practice. New hospitalists may need additional monitoring and support to ensure optimal patient outcomes.

CITATION: Goodwin JS et al. Association of hospitalist years of experience with mortality in the hospitalized Medicare population. JAMA Intern Med. 2018;178(2):196-203.

SHORT TAKES

Standardized handoff improves preparedness in the ICU

Cluster randomized stepped-wedge trial in eight ICUs in an academic center showed that a standardized handoff intervention was associated with a statistically significant reduction in the odds of clinician self-reported unpreparedness from a poor-quality handoff (odds ratio, 0.19; 95% confidence interval, 0.03-0.74; *P* = .03).

CITATION: Parent B et al. Effect of standardized handoff curriculum on improved clinician preparedness in the intensive care: A stepped-wedge cluster randomized clinical trial. JAMA Surg. 2018 Jan 3. doi: 10.1001/jamasurg.2017.5440.

This care is being provided with a perceived lack of intensivist support and training.

CITATION: Sweigart JR et al. Characterizing hospitalist practice and perceptions of critical care delivery. J Hosp Med. 2018 Jan 1;13(1):6-12.

Dr. Muñoa is a hospitalist at Denver Health Medical Center and an assistant professor of medicine at the University of Colorado at Denver, Aurora.

By Hassan Rao, MD

5 No clear benefit of pharmacist-led medication reconciliation in the community after hospital discharge

CLINICAL QUESTION: Does pharmacist-led medication reconciliation in the community after hospital discharge reduce health care utilization, readmission rates, ED visits, primary care visits, or primary care workload?

BACKGROUND: Accurate medication reconciliation is essential to ensure safe transitions of care after hospital discharge. Studies have shown that harm from prescribed or omitted medications is higher after discharge and pharmacist-led medication reconciliation on discharge has been shown to improve clinical outcomes. The effect of medication reconciliation after discharge performed by primary care and community-based pharmacist is unclear.

STUDY DESIGN: A meta-analysis.

SETTING: This meta-analysis included five randomized, controlled trials, six cohort studies, two pre- and postintervention studies performed in the United Kingdom and United States as well as one quality improvement project performed in Canada.

SYNOPSIS: The studies included demonstrated that community-based pharmacists were more effective at identifying and resolving discrepancies, compared with usual care, but the clinical relevance was unclear. There was no evidence that this reduced readmission rates. Because of the the heterogeneity of the settings, methods, and data reporting in the included trials, no firm conclusion could be drawn regarding the impact on either ED visits and primary care burden, and no consistent evidence of benefit was found. The benefit in clinical outcomes seen in prior studies may be related to other interventions, including patient education, medication review, and improved communication with primary care physicians. This study aimed to specifically isolate the impact of postdischarge, pharmacist-led medication reconciliation, and further research is still needed to understand the clinical relevance of medication discrepancies and which pharmacist-led interventions are most important.

BOTTOM LINE: Community-based pharmacists can identify and resolve discrepancies while performing medication reconciliation after hospital discharge, but there is no conclusive benefit in clinical outcomes, such as readmission rates, health care utilization, and primary care visits.

Dr. Rao

CITATION: McNab D et al. Systematic review and meta-analysis of the effectiveness of pharmacist-led medication reconciliation in the community after hospital discharge. BMJ Qual Saf. 2017 Dec 16. pii: bmjqs-2017-007087. doi: 10.1136/bmjqs-2017-007087.

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By Kimberly A. Indovina, MD

6 LAAC in nonvalvular AF provides stroke protection comparable to warfarin

CLINICAL QUESTION: Is mechanical left atrial appendage closure (LAAC) as effective as warfarin at preventing stroke in patients with nonvalvular atrial fibrillation?

BACKGROUND: Because thrombi typically form in the left atrial appendage, LAAC may be an alternative to chronic oral anticoagulation in nonvalvular atrial fibrillation. Two prior randomized controlled trials compared outcomes in patients treated with LAAC with outcomes with warfarin. PROTECT AF trial showed noninferiority of LAAC to warfarin but noted high procedural complication rates. Subsequently, PREVAIL trial failed to demonstrate noninferiority, although complication rates were low overall and similar in both groups. However, longer-term follow-up data were lacking.

STUDY DESIGN: Patient-level meta-analysis of two prospective randomized trials.

SETTING: Fifty-nine centers in the United States and Europe (PROTECT AF trial) and 41 centers in the United States (PREVAIL trial).

SYNOPSIS: Meta-analysis of 5-year follow-up data from 1,114 adult patients with atrial fibrillation, most with CHADS2 score greater than or equal to 2 , randomized to receive LAAC or warfarin showed similar frequency of the composite endpoint of stroke, systemic embolism, or cardiovascular/unexplained death (hazard ratio, 0.820; *P* = .27). Subgroup analysis showed no significant difference in outcomes by patient subset, including CHADS2 or HAS-BLED scores. While the rate of ischemic stroke was similar between groups, the rates of hemorrhagic and disabling/fatal stroke were significantly lower with LAAC (HR, 0.20; *P* = .0022 and HR, 0.45; *P* = .034, respectively). All-cause and cardiovascular mortality also were significantly lower with LAAC (HR, 0.73; *P* = .035 and HR, 0.59; *P* = .027, respectively), likely because of lower incidence of hemorrhagic stroke.

Dr. Indovina

These data cannot be generalized to patients who have an absolute contraindication to anticoagulation, as these patients were excluded. Further, these trials were conducted before widespread clinical use of novel oral anticoagulants, and LAAC has not yet been compared with these anticoagulants.

BOTTOM LINE: In patients with nonvalvular atrial fibrillation, LAAC with the Watchman device provides all-stroke prevention comparable with that of warfarin, as is associated with significantly lower rates of hemorrhagic stroke, disabling or fatal stroke, and mortality.

CITATION: Reddy VY et al. 5-year outcomes after left atrial appendage closure: From the PREVAIL and PROTECT AF trials. J Am Coll Cardiol. 2017;70(24):2964-75.

Dr. Indovina is a hospitalist at Denver Health Medical Center and an assistant professor of medicine at the University of Colorado at Denver, Aurora.

By Rehaan Shaffie, MD

7 Clinician denial of some patient requests decrease patient satisfaction

CLINICAL QUESTION: Is clinician denial of particular patient requests associated with the patient's satisfaction with that clinician?

BACKGROUND: Literature regarding patient satisfaction often focuses on nonspecific recommendations to improve patient-centered communication. There is lack of guidance on concrete advice for clinicians, particularly with regard to how a provider's responses to different patient requests are received.

STUDY DESIGN: Cross-sectional study.

SETTING: An outpatient family medicine clinic.

SYNOPSIS: Patient requests from 1,141 patients visiting the University of California, Davis, Family Medicine Clinic were sampled. The study examined clinician's approval or denial of patients' requests for referrals, pain medications, other new medicines, laboratory testing, radiology testing, or other testing and the patients' reported satisfaction of the clinician.

Dr. Shaffie

Clinician denial of particular requests was associated with decreased patient satisfaction. Specifically, a 19.75% drop for referral, 10.72% drop for pain medication, 20.36% drop for other new medications, and 9.19% drop for laboratory test. This study did not examine other potential reasons for decreased satisfaction.

BOTTOM LINE: Clinicians can better understand how to communicate in a patient-centered manner by understanding that not all patient requests are perceived as equal.

CITATION: Jerant A et al. Association of clinical denial of patient requests with patient satisfaction. JAMA Intern Med. 2018 Jan 1;178(1):85-91.

8 Teaching hospitals order more lab testing for certain conditions

CLINICAL QUESTION: Is there a difference in the ordering of laboratory tests between teaching and nonteaching hospitals?

Continued on following page

Continued from previous page

BACKGROUND: There is a general impression that trainees at teaching hospitals order more unnecessary laboratory testing, compared with those at nonteaching hospitals, but there are not enough data to support this generalization. In addition, there may be factors at teaching hospitals that influence these results.
STUDY DESIGN: Cross-sectional study.
SETTING: Teaching and nonteaching hospitals.
SYNOPSIS: Investigators used the Texas Inpatient Public Use Data file to examine hospital discharges from both teaching and nonteaching hospitals with a discharge diagnosis of cellulitis or pneumonia. There were a greater number of laboratory tests ordered at teaching hospitals, compared with nonteaching hospitals. For pneumonia, there were an additional 3.6 tests ordered per day, and for cellulitis, there were an additional 2.6 tests ordered per day. This finding was statistically significant, even when adjusted for illness severity, length of stay, and patient demographics.

This study did not account for confounding diagnoses that may have influenced ordering or the prescribing habits of different practitioner groups (such as residents, attending physicians, or advanced practice providers).
BOTTOM LINE: There is an increase in laboratory test orders in teaching versus nonteaching hospitals for pneumonia and cellulitis.
CITATION: Valencia V et al. A comparison of laboratory testing in teaching vs nonteaching hospitals for 2 common medical conditions. JAMA Intern Med. 2018 Jan 1;178(1):39-47.

Dr. Shaffie is a hospitalist at Denver Health Medical Center and an assistant professor of medicine at the University of Colorado at Denver, Aurora.

By Nicholas Scaletta, MD

9 Safety of MRI in patients with implantable cardiac devices

CLINICAL QUESTION: Is MRI safe for patients who have implanted ICD or pacemakers that have not been deemed to be "MRI conditional" by the Food and Drug Administration?
BACKGROUND: The majority of patients with implantable cardiac devices have a clinical indication for MRI within 10 years. Devices that meet certain criteria specified by the Food and Drug Administration are not felt to pose any safety hazards and are deemed "MRI conditional." Those that do not meet these criteria are referred to as "legacy" devices and are considered to be a contraindication to MRI by the FDA and device manufacturers. The majority of ICDs and pacemakers currently in use are legacy devices and access to MRI for patients who have these devices has been very limited. This study is the first large prospective study to evaluate the safety of an MRI protocol in patients with legacy ICDs and pacemakers.


Dr. Scaletta

STUDY DESIGN: Prospective nonrandomized study.
SETTING: Single academic medical center.
SYNOPSIS: During 2003-2015, 1,509 patients with ICDs (629 patients) and pacemakers (880 patients) were enrolled and underwent 2,103 MRI examinations supervised by either an electrophysiologist or a registered nurse with cardiac device programming experience.

Study outcomes included safety and device function immediately after MRI and change in device parameters both immediately after MRI and at long-term follow-up. The most important clinical adverse event that occurred was a reset of device to backup settings referred to as "power on reset" that occurred in nine examinations. Of these nine events, one was associated with mild physical discomfort, one led to device replacement, and one was associated with transient inhibition of pacing. Small changes in P- or R-wave amplitude and atrial or ventricular capture were noted at long-term follow-up. However, none of these were large enough to result in lead revision or device reprogramming. Notable limitations of this study include that it is a single-center study limiting its ability to be generalized and that nearly 20% of patients were lost to long term follow up.
BOTTOM LINE: When performed at an institution with an established safety protocol, MRI examinations in patients with legacy devices are not associated with clinically significant adverse safety events or changes in device function that require reprogramming. Multicenter studies are necessary to determine if these results can be generalizable.
CITATION: Nazarian S et al. Safety of magnetic resonance imaging in patients with cardiac devices. N Engl J Med. 2017 Dec 28;377(26):2555-64.

10 Skip the catheter-directed thrombolytics

CLINICAL QUESTION: Does the addition of catheter-directed thrombolysis to standard therapy with anticoagulation reduce the risk of the postthrombotic syndrome in proximal DVT?
BACKGROUND: Nearly half of all patients with proximal deep vein thrombosis (DVT) will develop postthrombotic syndrome at 2 years. Small trials have shown that the combination of catheter-directed delivery of thrombolytics, along with active mechanical clot removal, may prevent the postthrombotic syndrome.
STUDY DESIGN: Randomized, controlled trial.
SETTING: Fifty-six clinical centers throughout the United States.
SYNOPSIS: A total of 692 patients with symptomatic proximal DVT were randomized to receive either pharmacomechanical thrombolysis followed by anticoagulation or solely anticoagulation consistent with published guidelines. The primary outcome measured was the development of postthrombotic syndrome between 6 and 24 months. Over the 24 months that these patients were followed, 157 of 336 patients (47%) in the pharmacomechanical thrombolysis group and 171 of 355 patients (48%) in the control group developed postthrombotic syndrome (risk ratio, 0.96; 95% confidence interval, 0.82-1.11; P = .56). This result was consistent across predetermined subgroups.

Importantly, major bleeding within 10 days was more frequent in the pharmacomechanical thrombolysis group occurring in 6 of 336 patients (1.7%) versus 1 of 335 patients (0.3%) in the control group (P = .049). There was no significant difference in either recurrent venous thromboembolism at 24 months (12% in treatment group vs. 8% in control; P = .09) or deaths.

Of the 80 patients that did not present for follow-up postthrombotic syndrome assessments, two-thirds were in the control group, potentially leading to an underestimation of the effect of the intervention.
BOTTOM LINE: Pharmacomechanical catheter-directed thrombolysis does not reduce postthrombotic syndrome in proximal DVT and leads to an increased risk of major bleeding.
CITATION: Vedantham S et al. Pharmacomechanical catheter-directed thrombolysis for deep-vein thrombosis. N Engl J Med. 2017 Dec 7;377(23):2240-52.

Dr. Scaletta is a hospitalist at Denver Health Medical Center and an assistant professor of medicine at the University of Colorado at Denver, Aurora.




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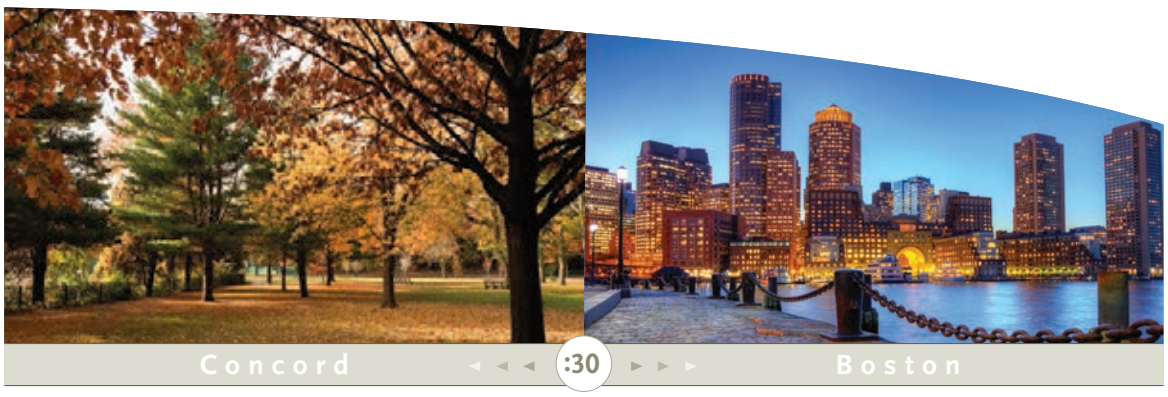

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Understanding the new CMS bundle model

BPCI Advanced enables hospitalists to work in Advanced APM

By Win Whitcomb, MD, MHM

Hospitalists have been among the highest-volume participants in Medicare's Bundled Payments for Care Improvement (BPCI) demonstration model, initiating over 200,000 episodes representing $4.7 billion in spending since the model began.[1] On Jan. 9, the Centers for Medicare & Medicaid Services announced BPCI's follow-on model, "BPCI Advanced."[2]

BPCI launched in October 2013 and sunsets at the end of Q3 2018. BPCI Advanced starts immediately upon conclusion of BPCI (Q4 2018) and is slated to finish at year-end 2023.

CMS intends for the program to qualify as an Advanced Alternative Payment Model (APM). As BPCI Advanced focuses on episodes of care involving an inpatient stay (it also includes three outpatient episodes.) and the subsequent 90-day recovery period, it represents the first large-scale opportunity for hospitalists to meet criteria for Advanced APM participation. Qualifying for the Advanced APM track of the Quality Payment Program – which involves meeting patient volume or payment thresholds[3] – comes with a 5% lump-sum bonus based on Medicare Part B fees and avoids exposure to penalties and reporting requirements of the Merit-based Incentive Payment System (MIPS).

Key program features

Acute care hospitals and physician groups may initiate episodes under BPCI Advanced, assuming financial risk under the model. Similar to its predecessor, BPCI Advanced assigns a target price based on past claims payments associated with the "episode initiator."

During the performance period, if the initiator can beat the price in the aggregate for its bundles, it can keep the difference, and if it comes in over the price, it must pay the difference back to Medicare. Medicare discounts the target price by 3%, effectively paying itself that amount. After that, there is no sharing of savings with Medicare, as opposed to the permanent ACO programs, where there is sharing after the ACO meets the minimum savings rate.

The program allows physician groups and hospital initiators to go it alone or to work with a "convener," which may share risk and reward with initiators, and may provide software, analytics, networks of high-performing providers like nursing facilities, and knowledge of specific care redesign approaches to enable program success. See Table 1 for a listing of other notable features of BPCI Advanced.

Quality measures

BPCI Advanced qualifies as an Advanced APM in part because payment is tied to performance on a set of quality measures (see Table 2). There are two measures applied to all episodes: all-cause hospital readmissions and advance care plan. These are notable because hospitalists may be especially focused on improvement activities in these areas.

While the advance care plan measure refers to a process reflected by record documentation and is therefore directly under the control of hospitalists, readmissions – and most of the other measures – require a team approach. Because the outcome measures are risk adjusted, accurate and complete clinical documentation is crucial, as it drives how risk is adjusted. Of note, all the 2018 measures, collected directly through claims, will place no additional administrative burden for collection on providers.

Two ways for hospitalists to participate

Hospitalist groups – whether independent or employed – may be episode initiators in BPCI Advanced. In this case, any episodes in which the group participates that carry the name of a member of the hospitalist group in the "Attending Provider" field on the hospital bill claim form to Medicare (and the associated carrier claim) are attributed to that member's physician group.

For example, if the group has chosen heart failure as an episode in which to participate at the program's outset, a hospitalization is assigned the heart failure DRG (diagnosis-related group) and a group member is the Attending Provider on the claim form (and submits a claim for the physician services), then the episode is attributed to that group. This means that the group is responsible for payments represented by Medicare Part A and Part B claims (with a few exclusions like trauma and cancer) against the target price for the initial hospitalization and subsequent 90-day period. In practice, hospitalists are rewarded for actions aimed at optimizing location after discharge,[4] avoiding readmissions, choosing efficient nursing facilities, and helping patients to maximize functional status.

The other way hospitalists may participate is through an agreement to share in savings with a hospital or physician group episode initiator. This requires hospitalist individuals or groups to enter into a contract with the initiator that meets certain program requirements – for example, report quality measures, engage in care redesign, use certified EHR technology (hospital-based clinicians automatically fulfill this criterion).

If there is broad participation, BPCI Advanced could represent a key milestone for hospitalists, as they seek to be recognized for the value they confer to the system as a whole instead of simply their professional billings. While there are legitimate concerns about the effect MIPS may have on health care value and the complexity of participation in APMs, barring a repeal of the law that created them, hospitalists now have the chance to extend their influence within and outside the hospital's four walls and be more fairly rewarded for it.

Dr. Whitcomb is chief medical officer at Remedy Partners in Darien, Conn., and cofounder and past president of the Society of Hospital Medicine. Contact him at wfwhit@comcast.net. Disclosure: The author's employer, Remedy Partners, is an Awardee Convener for the BPCI initiative and intends to apply as a Convener in BPCI Advanced.

Table 1: BPCI Advanced Features

First deadline to apply was March 12, 2018; a second deadline will be announced in the future.

- A voluntary model
- A single retrospective bundled payment with a 90-day clinical episode duration
- 29 inpatient clinical episodes
- 3 outpatient clinical episodes
- Qualifies as an advanced APM
- Physician group practices or acute care hospitals may initiate episodes (includes bearing financial risk)
- Payment is tied to performance on quality measures
- Preliminary target prices provided in advance of the first performance period of each year

Table 2: BPCI Advanced Quality Measures

2018 Measures

- All-Cause Hospital Readmission Measure*
- Advanced Care Plan*
- Perioperative Care: Selection of Prophylactic Antibiotic
- Complication Rate – Elective Hip/Knee Arthroplasty
- 30-Day Mortality – Coronary Artery Bypass Surgery
- Excess Days in Acute Care after Hospitalization for MI
- AHRQ Patient Safety Indicator 90

Potential 2020 Measures (added to 2018 Measures)

- CAHPS for Hospitals
- CAHPS for Clinicians
- CAHPS for Home Health Care
- Hypertension: Improvement in Blood Pressure
- Drug Regimen Review with Follow-up
- Surgical Site Infection
- Unplanned Reoperation in 30-Day Postop Period

*Required for all episodes; all others required for selected qualifying episodes

AHRQ – Agency for Health Research and Quality

CAHPS – Consumer Assessment of Healthcare Providers and Systems

References

1. Based on BPCI awardee convener Remedy Partners claims analysis.

2. https://innovation.cms.gov/initiatives/bpci-advanced.

3. https://qpp.cms.gov/apms/overview.

4. Whitcomb W. Choosing location after discharge wisely. The-hospitalist.org. 2018 Jan

5. Digital edition. Accessed Jan 13, 2018.

Launching hospital medicine into the future

New SHM president outlines emerging trends

By Nasim Afsar, MD, MBA, SFHM

Hospital medicine: 10 years ago

My first Society of Hospital Medicine Annual Conference was HM08, and it changed the course of my professional career.

I was a first-year hospitalist from an academic program of fewer than 10 physicians. My knowledge about my field did not extend much beyond the clinical practice of hospital medicine. I remember sitting at the airport on my way to HM08 and excitedly looking over the schedule for the meeting. I diligently circled the sessions that I was looking forward to attending, the majority of which focused on the clinical tracks. But by the end of the meeting, in additional to valuable medical knowledge, I walked away with novel insights that launched me into my future.

There were three transformative aspects of the meeting: It exposed me to new ideas in my specialty, to emerging themes and trends in health care, and – most importantly – to new colleagues who, over the years, have transformed into friends, collaborators, and mentors. Here's how each of those has played a role in my career:

New ideas in HM: In 2008, co-management was still a new concept. As I attended sessions and spoke with hospitalists from across the country, it became clear that this was a collaboration that would be core to our specialty. Within a couple of months of returning home from the annual conference, I was approached by the chair of neurosurgery at my institution with a proposal to develop a quality program for his group. While at that time I was considering other competing interests, my experience at HM08 helped me recognize that this was a unique opportunity to build bridges across specialties and to collaborate. I subsequently became the executive director of quality for neurosurgery and over the years was able to create a strong relationship between our departments that led to building a nationally recognized program with exceptional performance in hospital-based quality.

Side note: If you're interested in resources on co-management, please check out SHM's Resources for Effective Co-Management of Hospitalized Patients at https://www.hospitalmedicine.org/comanagement.

Emerging themes and trends in health care: While the quality movement had launched about a decade before HM08, many institutions still did not have robust programs. As I attended sessions during the annual meeting and spoke with thought leaders, one message became clear: Hospitalists would have to lead the quality movement at their institutions. When I returned home, I began learning about quality improvement and started to lead various initiatives. These efforts led to my appointment as associate chief medical officer for the health system. This position enabled me to leverage my knowledge of hospital-based care and collaborate across various specialties to reduce our mortality and readmission rates in the organization.

Side note: If you're interested in learning more about quality improvement educational and mentorship opportunities, please visit https://www.hospitalmedicine.org/qi *and look at the resources for each specific topic.*

And, most importantly, friendships: By far the most important thing I took away from HM08 was the friendships that started at that meeting and have developed over the years since. A decade later, I continue to rely on, grow from, and be challenged by the same people I met at that meeting. They are the colleagues I call when I find myself in a tough spot at work and need advice, the collaborators I work with on grants and projects, and the friends I text when I travel to a new town and want to grab a bite to eat.

Side note: If you're interested in connecting with colleagues who share similar interests, please visit https://www.hospitalmedicine.org/sigs *and review SHM's Special Interest Groups to find ones that are right for you. To connect on a more local level, find an SHM Chapter near you at* https://www.hospitalmedicine.org/chapters.

I've shared these stories with you because for me my journey with our society has been a deeply personal one. And I feel indebted to SHM and the incredible people who are drawn to it for helping me develop and enjoy a rich and rewarding career thus far. So, as I look forward to the next decade, I wanted to share my thoughts on HM and emerging themes in health care with you.

Hospital medicine: The next decade

New ideas in HM: Population health management

Building on our strong culture of collaboration as we move forward into this next decade, we have to define how we deliver value in the context of population health management. As hospitalists, we have to push the boundaries of the hospital and provide high-value care beyond our four walls.

How can we do that? I think technology will play a critical role in extending our reach beyond the hospital. As we move toward delivering greater value to our patients, lower-acuity patients will receive care in their homes. Telehealth will enable us to monitor and manage these patients remotely while transferring our bedside management to patients' bedrooms in their own homes. Virtual hospitals will further enable us to evaluate, triage, monitor, and manage patients remotely. Our active engagement in these efforts is critical to ensure the continued growth and value we bring to our patients, our organizations, and our society.

Emerging themes and trends in health care: Transitioning from quality to value

In the next decade, value will prevail. This is not a novel concept – much as quality was not a new idea in 2008.

Value has been around for a while: There are some robust programs nationally, there is research around the topic, and there are policies with implications for reimbursements. However, the full potential of value has not yet been realized by health care – it exists in individual programs, not in everything we do. The unprecedented number of mergers and acquisitions in health care in 2018 support the fact that the future will belong to those institutions that can deliver the highest quality of care at the most appropriate cost throughout the entire continuum of care.

What are some of the tools that will help us get there? Artificial intelligence and machine learning will improve the predictive value for the care we deliver to individual patients; some preliminary work in this area has already revealed that factors that we previously associated with higher risk of readmissions are not truly predictive. Another emerging technology is blockchain: By creating a single source of truth for our patients' medical information, it enables us to have dynamic, high-integrity records regardless of which health systems and EHRs have cared for those patients.

I wish you an energizing journey as you launch your future into the next dynamic decade of health care, and I look forward to connecting with you as we continue to build a society that prepares us for the challenges and opportunities ahead.

"In the next decade, value will prevail. This is not a novel concept – much like how quality was not a new idea in 2008."

Dr. Afsar is the president of the Society of Hospital Medicine and the chief ambulatory officer and chief medical officer for the accountable care organizations at UC Irvine Health.

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