February 2020
Volume 24 | No. 2

The Hospitalist

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Social determinants of health and the hospitalist

Are access to housing and food as important as therapeutics?

By Larry Beresford

While physicians acknowledge that the social determinants of health can impact outcomes from medical care, some may feel that trying to address factors such as homelessness, food insecurity, or lack of ready access to transportation or pharmacy services is just not part of the doctor's job. A majority of 621 physicians surveyed in the summer of 2017 by Salt Lake City–based health care intelligence firm Leavitt Partners say they are neither capable of nor responsible for addressing such issues.[1]

Continued on page 8

Dr. Ramon Jacobs-Shaw

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State of Hospital Medicine Survey plays key role in operations

Results help establish hospitalist benchmarks

The Hospitalist recently spoke with Brian Schroeder, MHA, FACHE, FHM, assistant vice president, Hospital & Emergency Medicine, at Atrium Health Medical Group in Charlotte, N.C., to discuss his participation in the *State of Hospital Medicine Survey*, which is distributed every other year, and how he uses the resulting report to guide important operational decisions.


Mr. Schroeder

Please describe your current role.

At Carolinas Hospitalist Group, we have approximately 250 providers at nearly 20 care locations across North Carolina. Along with my specialty medical director, I am responsible for the strategic growth, program development, and financial performance for our practice.

How did you first become involved with the Society of Hospital Medicine?

When I first entered the hospital medicine world in 2008, I was looking for an organization that supported our specialty. My physician leaders at the time pointed me to SHM. Since the beginning of my time as a member, I have attended the Annual Conference each year, attended the SHM Leadership Academy, served on an SHM committee, and participate in SHM's multisite Leaders group. Additionally, I have served as faculty at SHM's annual conference for 3 years – and will be presenting for the third time at HM20.

Why is it important that people participate in the *State of Hospital Medicine Survey*?

Participation in the survey is key for establishing benchmarks for our specialty. The more people participate (from various arenas like private groups, health system employees, and vendors), the more accurate the data. Over the past 4 years, SHM has improved the submission process of survey data – especially for practices with multiple locations.

How have the data in the report impacted important business decisions for your group?

We rely heavily on the investment/provider benchmark within the survey data. Over the years, as the investment/provider was decreasing nationally, our own investment/provider was increasing. Based on the survey, we were able to closely evaluate our staffing models at each location and determine the appropriate skill mix–to-volume ratio. Through turnover and growth, we have strategically hired advanced practice providers to align our investment more closely with the benchmark. Over the past 2 years, our investment/provider metric has decreased significantly. We were able to accomplish this while continuing to provide appropriate care to our patients. We also utilize the Report to monitor performance incentive metrics, staffing model trends, and encounter/provider ratios.

What would you tell people who are on the fence about participating in the survey – and ultimately, purchasing the finished product?

Do it! Our practice would never skip a submission year. The data produced from the survey help us improve our clinical operations and maximize our financial affordability. The data also assist in defending staffing decisions and clinical operations change with senior leadership within the organization.

Don't miss your chance to submit data that will help put together the latest snapshot of the hospital medicine specialty. The *State of Hospital Medicine Survey* is open now and runs through Feb. 16, 2020. Learn more and register to participate at hospitalmedicine.org/survey.

THE Hospitalist®

February 2020
Volume 24 | No. 2

THE HOSPITALIST (ISSN 1553-085X) is published monthly for the Society of Hospital Medicine by Frontline Medical Communications Inc., 7 Century Drive, Suite 302, Parsippany, NJ 07054-4609. Print subscriptions are free for Society of Hospital Medicine members. Annual paid subscriptions are available to all others for the following rates:

Individual: *Domestic* – $195 (One Year), $360 (Two Years), $520 (Three Years), *Canada/Mexico* – $285 (One Year), $525 (Two Years), $790 (Three Years), *Other Nations* - Surface – $350 (One Year), $680 (Two Years), $995 (Three Years), *Other Nations* - Air – $450 (One Year), $875 (Two Years), $1,325 (Three Years)

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Resetting your compensation

Using the State of Hospital Medicine Report to bolster your proposal

By Paul Sandroni, MD

In the ever-changing world of health care, one thing is for sure: If you're not paying attention, you're falling behind. In this column, I will discuss how you may utilize the Society of Hospital Medicine (SHM) *State of Hospital Medicine Report* (*SoHM*) to evaluate your current compensation structure and strengthen your business plan for change. For purposes of this exercise, I will focus on data referenced as Internal Medicine only, hospital-owned Hospital Medicine Groups (HMG).

Issues with retention, recruitment, or burnout may be among the first factors that lead you to reevaluate your compensation plan. The *SoHM* Report can help you to take a dive into feedback for these areas. Look for any indications that compensation may be affecting your turnover, inability to hire, or leaving your current team frustrated with their current pay structure. Feedback surrounding each of these factors may drive you to evaluate your comp plan but remain mindful that money is not always the answer.

You may complete your evaluation and find the data could suggest you are in fact well paid for the work you do. Even though this may be the case, the evaluation and transparency to your provider team may help flush out the real reason you are struggling with recruitment, retention, or burnout. However, if you do find you have an opportunity to improve your compensation structure, remember that you will need a compelling, data-driven case to present to your C-suite.

Let us start by understanding how the market has changed over time using data from the 2014, 2016, and 2018 *SoHM* Reports. Of note, each report is based on data from the prior year. Since 2013, hospital-owned HMGs have seen a 16% increase in total compensation while experiencing only a 9% increase in collections. Meanwhile RVU productivity has remained relatively stable over time. From this, we see hospitalists are earning more for similar productivity. The hospital reimbursement for professional fees has not grown at the same rate as compensation. Also, the collection per RVU has remained relatively flat over time.

It's simple: Hospitalists are earning more and professional revenues are not making up the difference. This market change is driving hospitals to invest more money to maintain their HMGs. If your hospital hasn't been responding to these data, you will need a strong business plan to get buy in from your hospital administration.

Now that you have evaluated the market change, it is time to put some optics on where your compensation falls in the current market. When you combine your total compensation with your total RVU productivity, you can use the *SoHM* Report to evaluate the current reported benchmarks for Compensation per RVU. Plotting these benchmarks against your own compensation and any proposed changes can help your administration really begin to see whether a change should be considered. Providing that clear picture in relevance to the *SoHM* benchmark is important, as a chart or graph can simplify your C-suite's understanding of your proposal.

By simplifying your example using Compensation per RVU, you are making the conversation easier to follow. Your hospital leaders can clearly see the cost for every RVU generated and understand the impact. This is not to say that you should base your compensation around productivity. It is merely a way to roll in all compensation factors, whether quality related, performance based, or productivity driven, and tie them to a metric that is clear and easy for administration to understand.

Remember, when designing your new compensation plan, you can reference the *SoHM* Report to see how HMGs around the country are providing incentive and what percentage of compensation is based on incentive. There are sections within the report directly outlining these data points.

Dr. Sandroni is director of operations, hospitalists, at Rochester (N.Y.) Regional Health.

Now that we have reviewed market change and how to visualize change between your current and proposed future state, I will leave you with some final thoughts regarding other considerations when building your business plan:

- Focus on only physician-generated RVUs.
- Consider Length of Stay impact on productivity.
- Decide if Case Mix Index changes have impacted your staffing needs.
- Understand your E and M coding practices in reference to industry benchmarks. The *SoHM* Report provides benchmarks for billing practices across the country.
- Lastly, clearly identify the issues you want to address and set goals with measurable outcomes.

There is still time for your group to be part of the 2020 *State of Hospital Medicine Report* data by participating in the 2020 Survey. Data are being accepted through Feb. 16, 2020. Submit your data at hospitalmedicine.org/2020survey.

Administrative burden and burnout

In May 2019, SHM sent a letter to U.S. Senators Tina Smith (D-Minn.) and Bill Cassidy, MD, (R-La.) in support of the Reducing Administrative Costs and Burdens in Health Care Act of 2019. In excerpts from the letter below, the society details the link between administrative burdens and physician burnout.

Providers and hospital systems expend countless resources, both time and dollars, adhering to unnecessary and excessive administrative burdens instead of investing those resources in providing quality patient care. National data suggest that more than 50% of the physician workforce is burned out. Excessive administrative burden is a major contributor to physician burnout, which negatively affects quality and safety within the hospital and further increases health care costs. Notably, the Reducing Administrative Costs and Burdens in Health Care Act calls for a 50% reduction of unnecessary administrative costs from the Department of Health & Human Services within the next 10 years.

Hospitalists are front-line clinicians in America's acute care hospitals whose professional focus is the general medical care of hospitalized patients. Their unique position in the health care system affords hospitalists a distinct perspective and systems-based approach to confronting and solving challenges at the individual provider and overall institutional level of the hospital. In this capacity, hospitalists experience multiple examples of administrative requirements directly detracting from patient care and redirecting finite resources away from care to meet compliance demands.

A recent study in the *Journal of Hospital Medicine* indicated that an average of 5.1 full-time employees, not including case managers, are required to navigate the audit and appeals process associated with hospital stay status determinations. These are resources that should be directly used for patient care, but are redirected toward regulation compliance, increasing cost of care without increasing quality.

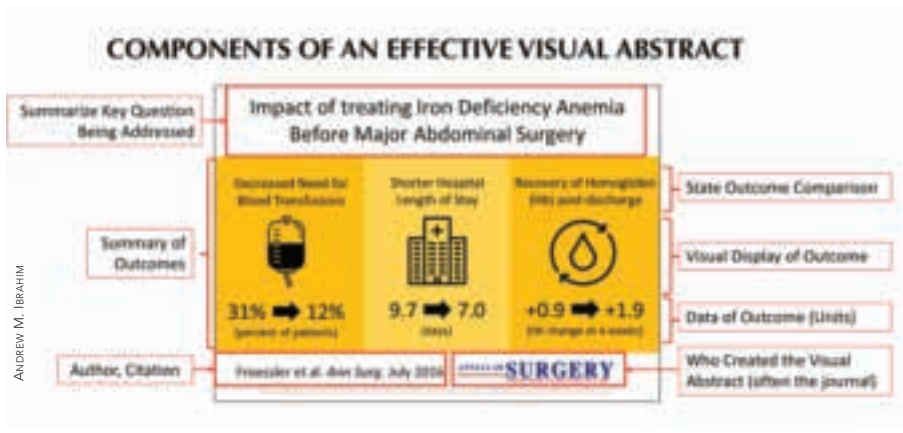
To read the entire letter, visit hospitalmedicine.org/policy--advocacy/letters/shm-supports-the-reducing-administrative-costs-and-burdens-in-health-care-act-of-2019/.

The evolution of social media and visual abstracts in hospital medicine

By Charlie M. Wray, DO, MS

In recent years, social media platforms like Twitter, Facebook, and Instagram have become popular gathering spots for clinicians to connect, engage, and share medical content. Medical journals, which often act as purveyors of this content, have recognized social media's growing power and influence and have begun looking for ways to better engage their audiences.

In 2016, the Annals of Surgery was looking to better disseminate the work being published in its pages and looked to Twitter as one way of accomplishing this. At the time, most journals were posting only the title or a brief description of the published manuscript and hoping their Twitter followers would click on the article link. As journal editors were finding, if the audience was not immediately familiar with the topic or able to quickly capture the nuances of the study, there was a good chance the reader would continue to scroll past the post and never view the article.

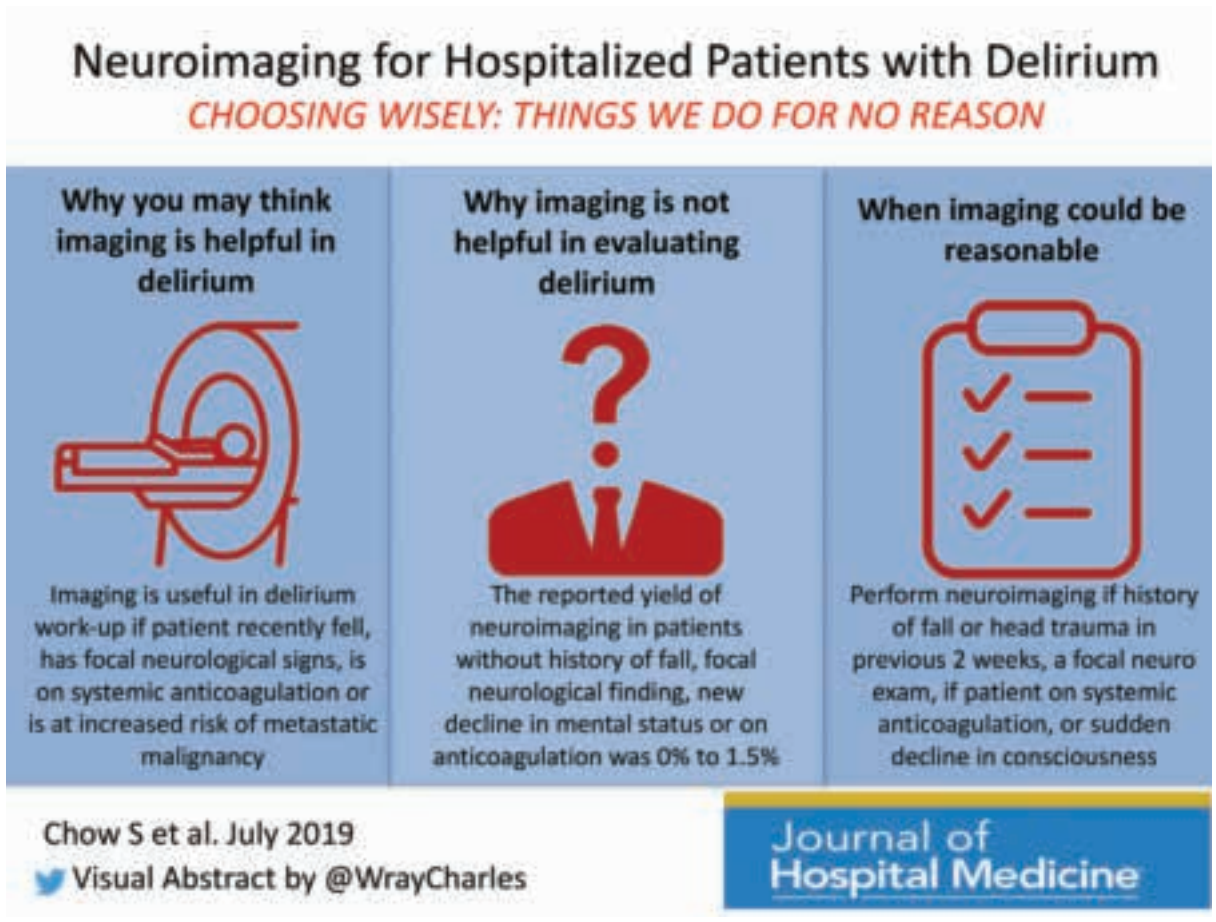


Recognizing that social media heavily rely on visual material to garner attention, Annals turned to Andrew M. Ibrahim, MD, an architect turned surgeon, to help them rethink their social media strategy. Using the design training he had previously received in his career as an architect, Dr. Ibrahim created a simple visual tool that could be used to capture the often complicated and nuanced aspects of a research study. He called his creation a "visual abstract."

But what is a visual abstract? Simply, they are visual representations of the key findings of a published manuscript; or put another way, a "movie trailer" to the full manuscript. While they can take many different forms and designs, they often consist of three key components: (1) a simple, easy to understand title, (2) a primary focus on outcomes, and (3) the use of visual cues or images to help the reader absorb and remember the take-home message. This simplified delivery of complex information allows the producer to efficiently share complex findings in a format that allows for rapid visualization and interpretation.

Since its inception, several studies have examined the influence visual abstracts have on disseminating research. One study conducted by Dr. Ibrahim and his colleagues found that articles tweeted with a visual abstract had an almost eightfold increase in the number of Twitter impressions (a measure of social media dissemination) and a threefold increase in article visits, compared with those manuscripts tweeted with the article title only.[1] These results reflect what behavioral scientists have long understood: Humans process visual data better than any other type of data.[2] For instance, according to research compiled by 3M, the company behind popular sticky notes, visual data are processed 60,000 times faster than text and have been shown to improve learning by 400%.[3] Likewise, digital marketers have found that pages with videos and images draw on average 94% more views than their text-only counterparts.[4]

Dr. Wray is a hospitalist at the University of California, San Francisco, and the San Francisco Veterans Affairs Medical Center. He also serves as a digital media and associate editor for the Journal of Hospital Medicine.



This knowledge, along with the substantial difference in engagement and dissemination characteristics from Dr. Ibrahim's study, was far beyond what anyone might have expected and started a trend in medicine that continues to grow today. Medical journals across all practices and disciplines, including several leading journals, such as the New England Journal of Medicine, the Journal of the American Medical Association, and the Journal of Hospital Medicine (JHM), are utilizing this new tool to help disseminate their work in social media.

Visual abstracts have expanded beyond the social media sphere and are now frequently used in Grand Rounds presentations and as teaching tools among medical educators. JHM was one of the first journals to adopt the use of visual abstracts and has since published more than 150 in total. Given the growing popularity and expanded use of visual abstracts, JHM recently began archiving them on the journal's website to allow clinicians to use the material in their own creative ways.

Visual abstracts are just one piece of the growing enterprise in social media for JHM. Recogniz-

Journal of Hospital Medicine

ing the growing utilization of social media among physicians, JHM has taken a leading role in the use of online journal clubs. Since 2014, JHM has run a monthly Twitter-based journal club that discusses recently published articles and hospital medicine–based topics, called #JHMChat.[5] This forum has allowed hospitalists from across the country, and around the world, to connect, network, and engage around topics important to the field of hospital medicine. The journal frequently reaches beyond hospital medicine borders and partners with other specialties and interest groups to gain perspective and insights into shared topic areas. To date, #JHMChat has one of the most robust online communities and continues to attract new followers each month.

As social media use continues to expand among clinicians, engagement tools like visual abstracts and Twitter chats will certainly continue to grow. Given that more clinicians are scrolling through websites than flipping through journal pages, medical journals like JHM will continually look for novel ways to engage their audiences and create communities among their followers. While a former architect who now practices as a surgeon led the way with visual abstracts, it remains to be seen who will create the next tool used to capture our attention on the ever-evolving sphere of social media.

Journal of Hospital Medicine

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Hospital Medicine HM20 PREVIEW

Innovations to expect at HM20

Course director Dr. Benji K. Mathews offers highlights

Benji K. Mathews, MD, SFHM, CLHM, chief of hospital medicine at Regions Hospital in St. Paul, Minn., and director of point of care ultrasound (POCUS) for hospital medicine at HealthPartners, is the course director for the Society of Hospital Medicine's 2020 Annual Conference (HM20), which will be held April 16-18 in San Diego.

Dr. Mathews, also an associate professor of medicine at the University of Minnesota, Minneapolis, sat down with the Hospitalist to discuss the role of the course director in formulating the HM20 agenda, as well as highlighting some exciting educational sessions, workshops, and other events during the annual conference.

In your role as course director for HM20, did you have a particular theme you wanted to emphasize?

We did not go with a single theme, because we're trying to provide a comprehensive educational and networking opportunity, so trying to focus the conference on a single theme a year in advance did not seem very prudent. There are multiple themes, from health disparities to technology to education. For a field like hospital medicine that's rapidly evolving, we thought it best to keep it open and instead further develop the conference tracks: What new tracks can be created, what older tracks can be maintained because they have been highly successful, and which tracks do we retire?

Can you discuss some of the tracks at HM20?

The new track we have this year is a minitrack: the Technology track. That track is meant to examine the current and future technology that will impact care delivery, including telehealth, wearables, apps for digital learning, and clinicians at the bedside. Innovation is at the core of hospital medicine, and we're constantly exploring how to deliver efficient, timely, and effective care. "Future-casting" is important, and this track speaks to that.

There are some old standards that I would also recommend. The "Great Debate" is one of the hardest to select, because while you can create a great session title, we need to find two talented speakers, as a debate between two experts is very different than a presentation. The speakers take opposing sides on clinical decisions, the latest literature reviews, best practices, and the audience gets to vote. Topics we are using this year include "Procalcitonin: Friend or Foe," "Guidelines Controversies in Inpatient Care," and "POCUS vs. Physical Exam." Some of the debaters include Carrie Herzke, MD, of Johns Hopkins University, Baltimore; Daniel Dressler, MD, of Emory University, Atlanta; Jordan Messler, MD, of Morton Plant Hospital in Clearwater, Fla.; and Michelle Guidry, MD, of the Southeast Louisiana Veterans Health Care System and Tulane University, both in New Orleans.

One of the highlights this year is that we're trying to bring more gender equity into our speaker lineup. Rarely will we have only two male speakers at a session, and I don't think we have any all-male panels, jokingly called "manels" in the past.

Dr. Mathews

Are there some "tried-and-true" tracks or sessions that are returning in HM20?

I'd like to highlight the Clinical Mastery track. That was a new track last year, and has returned this year. That track is focused on helping hospitalists become expert diagnosticians at the bedside. "Pitfalls, Myths and Pearls in Diagnostic Reasoning" is one session to note in that track. Another special focus this year within Clinical Mastery will be on using the rational clinical exam to augment your diagnostic skills.

When programming the annual conference, how do you balance the needs of community hospitalists with academic hospitalists?

The value we have on the annual conference committee is that there are a fair number of community hospitalists, advance practice clinicians, representation from med-peds, and those of family practice, for instance. Generally, there is a wide sampling of the decision makers from across the specialty helping to program the conference – it's not just academic powerhouses. That said, it is hard to curate content that is solely for a specific subset of hospitalists without marginalizing other subsets. We don't want to isolate people. But a lot of our Rapid Fire topics address frontline hospitalists. This is content that will directly impact community hospitalists. And some of the content that we're taking a bit of risk on this year are in health equity and disparities. Academic groups study this, but frontline clinicians deal with this every day, relating to both patients and staff. For example, in regard to patients, we have content focused on caring for the LGBTQ community and sessions on refugee health, as well as hospitalists and global health. We have an emphasis on diversity and inclusion in the workplace, with speakers from both community and academic settings. There will be good sessions with gender equity themes, practical tips in promotion and hiring practices. There are a couple workshops on gender equity; one to note is "Top 10 Ways for Men + Women to Engage in Gender Equity."

Can you speak to the content that is targeted at nurse practitioners and physician assistants?

This is near and dear to my heart. Our goal this year was to highlight nurse practitionerss and physician assistants in a track dedicated to them. We have a basic session called "Training Day: How to Onboard and Operationalize an Advanced Practice Provider Workforce" – this is a "bread-and-butter" session presented by speakers who have built programs from the ground up. Other important sessions address how to advance the careers of NPs and PAs – "Professional Development for NP/PAs" – and on mentorship, which emphasizes a culture of partnership on projects like providing high quality, safe care.

Are there any workshops that attendees should take note of?

One I would like to highlight is "Survive! The POCUS Apocalypse Adventure." This highly anticipated offering is preregistration required, hosted for the first time on day 1 of the main conference. The workshop will introduce the gamification of POCUS to hospitalists. Each participant will be expected to perform ultrasound examinations and interpret their findings in order to gather clues that will lead to the cure for a zombie apocalypse. There are a lot of risks in programming the Annual Conference, and gamification might be considered risky because it's new. But I think it has a very good chance of success.

What are some other innovations that the annual conference committee has planned for 2020?

One exciting addition is what we call "Breakfast with an Expert." This is a new rapid-fire didactic session format where we have three experts speak on different hot topics, such as "Nutritional Counseling" (led by Kate Shafto, MD), "Things I Wish I Knew Earlier in my Career" (Brad Sharpe, MD), and "Case-Based Controversies in Ethics." These take place on the very first day of the conference, before the opening general session. Attendees can grab their breakfast and listen to any of these sessions before they head into the

Continued on following page

Community pediatric care is diminishing

Loss of pediatric inpatient units may be devastating

By Todd J. Ochs, MD

The mantra of community hospital administrators is that pediatric care does not pay. Neonatal intensive care pays. For pediatrics, it is similar to how football programs (Medicare patients) support minor sports (pediatrics and obstetrics) at colleges. However, fewer even mildly sick newborns are cared for at community hospitals, which has led to a centralization of neonatal and pediatric care and a loss of pediatric expertise at the affected hospitals.

Pediatric hospitalists are hired to cover the pediatric floor, the emergency department, and labor and delivery, then fired over empty pediatric beds. The rationale expressed is that pediatricians have done such a good job in preventive care that children rarely need hospitalization, so why have a pediatric inpatient unit? It is true that preventive care has been an integral part of primary care for children. Significantly less that 1% of child office visits result in hospitalization.

Advocate Health Care has closed inpatient pediatric units at Illinois Masonic, on Chicago's North Side, Good Samaritan in Downers Grove, and Good Shepherd in Barrington. Units also have been closed at Mount Sinai in North Lawndale, Norwegian American on Chicago's West Side, Little Company of Mary in Evergreen Park, and Alexian Brothers in Elk Grove.

As a Chicago-area pediatrician for more than 30 years, I have learned several things about community-based pediatric care:

1. Pediatrics is a geographic specialty. Parents will travel to shop, but would rather walk or have a short ride to their children's medical providers. Secondary care should be community based, and hospitalization, if necessary, should be close by as well.

2. Hospitals that ceased delivering pediatric inpatient care lost their child-friendliness and pediatric competence, becoming uncomfortable delivering almost any care for children (e.g., sedated MRIs and EEGs, x-rays and ultrasounds, ECGs and echocardiograms, and emergency care).

3. In almost all hospitals, after pediatrics was gone eventually so passed obstetrics (another less remunerative specialty). Sick newborns need immediate, competent care. Most pediatric hospitalizations are short term, often overnight. Delaying newborn care is a medicolegal nightmare. Transferring a sick child to a distant hospital, to stay a day or 2, is counterintuitive, and exposes the child and his or her family to a potentially dangerous drive or helicopter ride.

4. As pediatric subspecialty care becomes more centralized, parents are asked to travel for hours to see a pediatric specialist. There are times when that is necessary (e.g., cardiovascular surgery). Pediatric subspecialists, such as pediatric otolaryngologists, then leave community hospitals, forcing even minor surgeries (e.g., ear ventilation tubes) to be done at a center. In rural areas, this could mean hours of travel, lost work days, and family disruption.

5. Children's hospitals get uninsured and publicly insured children sent hundreds of miles, because there were no subspecialists in the community who would care for these children.

What is the solution, in our profit-focused health care system?

1. Hospitals' Certificates of Need could include a mandate for pediatric care.

2. Children's hospitals could be made responsible for community-based care within their geographic catchment areas.

3. The state or the federal government could mandate and financially support community-based hospital care.

4. Deciding what level of care might be appropriate for each community could depend upon closeness to a pediatric hospital, health problems in the community, and the availability of pediatric specialists.

5. A condition for medical licensure might be that a community-based pediatric subspecialist is required to care for a proportion of the uninsured or publicly insured children in his or her area.

6. Reimbursements for pediatric care need to rise enough to make caring for children worth it.

The major decision point regarding care for children cannot be financial, but must instead embrace the needs of each affected community. If quality health care is a right, and not a privilege, then it is time to stop closing pediatric inpatient units, and, instead, look for creative ways to better care for our children.

This process has led to pediatric care being available only in designated centers. The centralization of pediatric care has progressed from 30 years ago, when most community hospitals had inpatient pediatric units, to the search for innovative ways to fill pediatric beds in the mid-90s (sick day care, flex- or shared pediatric units), to the wholesale closure of community pediatric inpatient beds, from 2000 to the present. I have, unfortunately, seen this first-hand, watching the rise of pediatric mega-hospitals and the demise of community pediatrics. It is a simple financial argument. Care for children simply does not pay nearly as well as does care for adults, especially Medicaid patients. Pediatricians are the poorest paid practicing doctors (public health doctors are paid less).

It is true that pediatricians always have been at the forefront of preventive medicine, and that pediatric patients almost always get better, in spite of our best-intentioned interventions. So community-based pediatricians admit very few patients.

With the loss of pediatric units, community hospitals lose their comfort caring for children. This includes phlebotomy, x-ray, trauma, surgery, and behavioral health. And eroding community hospital pediatric expertise has catastrophic implications for rural hospitals, where parents may have to drive for hours to find a child-friendly emergency department.

Dr. Ochs is in private practice at Ravenswood Pediatrics in Chicago. He said he had no relevant financial disclosures.

Is there an answer?

1. Hospitals are responsible for the patients they serve, including children. Why should a hospital be able to close pediatric services so easily?

2. Every hospital that sees children, through the emergency department, needs to have a pediatrician available to evaluate a child, 24/7.

3. There needs to be an observation unit for children, with pediatric staffing, for overnight stays.

4. Pediatric hospitalists should be staffing community hospitals.

5. Pediatric behavioral health resources need to be available, e.g., inpatient psychiatry, partial hospitalization programs, intensive outpatient programs.

6. Telehealth communication is not adequate to address acute care problems, because the hospital caring for the child has to have the proper equipment and adequate expertise to carry out the recommendations of the teleconsultant.

If we accept that our children will shape the future, we must allow them to survive and thrive. Is health care a right or a privilege, and is it just for adults or for children, too?

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plenary. Hospitalists have asked for more content, so we're adding these as a response to that hunger for more educational content. This format is supposed to be a bit cozier, with more Q&A.

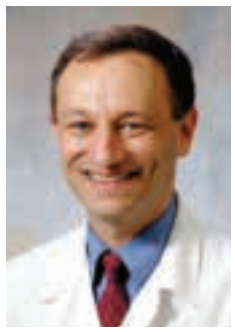
Another aspect of HM20 to highlight is the Simulation Center. The Sim Center is a space that hosts a variety of hospital medicine skill development areas. This is an interactive center where attendees can learn to perform bedside procedures, during the first 2 days of the conference. The Sim Center is slightly different than the precourses, in that we are offering 1-hour blocks of small-group instruction for which attendees preregister. This aligns with larger SHM efforts to encourage hospitalists to be more confident with bedside procedures.

To register for the 2020 Annual Conference, including precourses, visit https://shmannualconference.org/register/.

Social determinants

Continued from page 1

But that view may become unsustainable as the U.S. health care system continues to advance toward value- and population-based models of health care and as evidence mounts that social factors are important contributors to costly outcomes, such as avoidable hospital readmissions or emergency room visits. A recent report from the Robert Wood Johnson Foundation estimates that at least 40% of health outcomes are the result of social and economic factors, while only 20% can be attributed to medical care.[2]



Most hospitalists believe social determinants of health are part of their job responsibilities ... For these complex dimensions, efforts to improve health must extend to sectors far beyond traditional health care.

– Dr. Meltzer

"This is a hot topic – getting a lot of attention these days," said hospitalist and care transitions expert Ramon Jacobs-Shaw, MD, MPA, regional medical officer for CareMore Health, a California-based physician-led health delivery organization and subsidiary of Anthem. "If you go around the country, some doctors still see social factors as the realm of the social worker. But large health care organizations are coming to recognize that social determinants are huge contributors to the health of their members and to the outcomes of their care."

Hospitalists could be the natural providers to delve into the specific psychosocial aspects of their patients' lives, or try to figure out how those factors contribute to health care needs, Dr. Jacobs-Shaw said. They typically confront such issues while the patient is in the hospital bed, but what are the steps that led to the hospitalization in the first place? What will happen after the patient is discharged?

"For example, if patients lack transportation, how can they get to their follow-up medical appointment in the primary care office in order to manage their diabetes? If you can't follow up with them, their diabetes could get out of control, with complications as a result, such as an infected wound," he said. Another big issue is access to affordable medications. "CareMore has pharmacists embedded on our care teams. They try to figure out the best medicine for the patient but at the lowest cost. They meet individually with patients and do medication counseling, particularly for those with polypharmacy issues."

More equitable health care

Dr. Jacobs-Shaw has long held a personal interest in issues of inclusiveness, diversity, and how to make health care more equitable for historically underserved groups. Asking how to have a bigger impact on these issues is what brought him, after 13 years as a hospitalist on the East Coast, to CareMore, a company that has made addressing social needs central to its care model. "In California, where I am based, we are a wraparound for patients who are covered by Medicare Advantage plans. We are whatever the patient needs us to be."

He oversees a group of hospitalists, dubbed extensivists, who provide advanced patient care and chronic disease management. In the extensivist model, physicians and advanced practice nurses provide comprehensive and coordinated care to patients with complex medical issues, taking their scope of practice beyond the hospital into homes, post-acute care facilities, and other settings, with a focus on keeping patients healthier and reducing readmission.[3]

"We met with hospitalists ... because we wanted their feedback on how to raise awareness of the social needs of patients. ... They see the patients who come in from the homeless shelters."

– Ms. Nichols

"Our patients get access to extra services and resources, some of which are available at our care centers – which are one-stop outpatient facilities. We also focus on a lot of things physicians didn't historically think were within their wheelhouse. Hospitalists deal with these kinds of issues every day, but may not label them as social determinants of health," Dr. Jacobs-Shaw said. He emphasized that hospitalists should realize that they are not powerless to address these issues, working in partnership with other groups in and out of the hospital. They should also know that health care payers increasingly are dedicating resources to these issues.

"We just started trying to address homelessness through a pilot in Orange County, working with nonprofit organizations and philanthropy to offer a transitional site of care for our patients who are being discharged from the hospital and have housing insecurity issues, to get them transitioned into more secure housing," Dr. Jacobs-Shaw said. CareMore also has a transportation collaborative that offers no-cost, nonemergency transportation to medical appointments. "That's meeting them where they are at, based on an assessment of their needs and resources."

Social determinants defined

The social determinants of health – social, environmental, and other nonmedical factors that contribute to overall health status and medical need – have been defined by the World Health Organization as: "conditions in which people are born, grow, live, work, and age." That is a broad complex of overlapping social and systems issues, but it provides a context for a broader understanding of the patient's health and response to medical interventions.

Socioeconomic status is a huge determinant. Level of education may be more important than income if the person lacks the health literacy to navigate the system and access needed care. Housing instability may include poor sanitation, substandard dwellings, or unsafe neighborhoods – all of which can affect a person's well-being. Environmental health may include compromised air quality – which can impact pulmonary health. Other issues include access to employment and child care, utility needs, and interpersonal violence.

A 2014 paper in Annals of Internal Medicine found that residence within a disadvantaged neighborhood was a factor in hospital readmission rates as often as was chronic pulmonary disease.[4] A recent report on social determinants of health by the National Institute for Health Care Management notes that patients with food insecurity are 2.4 times more likely to go to the emergency room, while those with transportation needs are 2.6 times more likely.[5]

What can health care leaders do to better equip their clinicians and teams to help patients deal with this array of complex needs? Intermountain Healthcare, based in Salt Lake City, spearheaded in 2018 the development of the Alliance for the Determinants of Health, starting in the communities of Ogden and St. George, Utah. The Alliance seeks to promote health, improve access to care, and decrease health care costs through a charitable contribution of $12 million over 3 years to seed collaborative demonstration projects.

Lisa Nichols, assistant vice president for community health at Intermountain, said that, while hospitalists were not directly involved in planning the Alliance, hospitalists and ED physicians have become essential to the patient-screening process for health and social needs.

"We met with hospitalists, emergency departments, and hospital administrators, because we wanted their feedback on how to raise awareness of the social needs of patients," she said. "They have good ideas. They see the patients who come in from the homeless shelters."

Other hospitals are subsidizing apartments for homeless patients being discharged from the hospital. CommonSpirit Health, the new national Catholic health care organization formed by the 2019 merger of Dignity Health and Catholic Health Initiatives, has explored how to help create and sustain affordable housing in the communities it serves. Investments like this have inspired others, such as

Kaiser Permanente, to get involved in supporting housing initiatives.[6]

Comprehensive community care

David Meltzer, MD, PhD, a hospitalist and professor of medicine at the University of Chicago, said most hospitalists these days believe social determinants of health are part of their job responsibilities.

"That's not to say we all do it well. We may fail at addressing some of the barriers our patients face. But I don't know anyone who still says it's not their job," he said.

> *"Large health care organizations are coming to recognize that social determinants are huge contributors to the health of their members."*
>
> – Dr. Jacobs-Shaw

Since 2012, Dr. Meltzer has led a pilot called Comprehensive Care Physicians (CCP), in which the same physician cares for patients with chronic health problems in the clinic and in the hospital, working with a team of nurse practitioners, social workers, care coordinators, and other specialists. A total of 2,000 patients with chronic health problems were enrolled in the study from 2012 to 2016, half assigned to standard care and half assigned to five CCP doctors. The result: The CCP model has shown large improvements in outcomes – particularly among the more vulnerable, less activated patients – is preferred by patients, and has significantly reduced health care utilization.

The next step for the research team is another randomized controlled trial called Comprehensive Care, Community, and Culture, designed to address unmet social needs. Study group patients will also be screened for unmet social needs and have access to a community health worker and to the initiative's Artful Living Program, which includes community and cultural activities like yoga and dance classes, cooking classes, art classes, and music concerts. For these complex dimensions and determinants of health, Dr. Meltzer explained, efforts to improve health must extend to sectors far beyond traditional health care.

"I think trying to understand your patients' social and nonmedical needs starts with getting to know them, and asking about their needs," he said. "The better you know them, the better you are able to make medical decisions that will promote positive outcomes."

Sound Physicians, a national hospitalist company based in Tacoma, Wash., and working in 350 hospitals in 41 states, recently published a blog post on its website about the importance of social determinants of health.[7] Sound Physicians participates in value-based care through bundled Medicare/Medicaid contracts based on episodes of care for hospitalized patients with certain diagnoses or DRGs, explained John Dickey, MD, the company's chief medical officer for population health.

"We've been heavily involved in trying to improve cost and outcomes of care since 2015. Social determinants absolutely play into trying to lower costs of care and reduce rates of readmissions, which are often multifactorial in cause," he said. Hospitalists are uniquely equipped to impact post-acute outcomes, Dr. Dickey said, working in partnership with a position Sound Physicians calls the clinical performance nurse.

> *"We can ... provide education for our hospitalist staff, and work with in-home care supports for patients ... who otherwise might end up in a skilled nursing facility."*
>
> – Dr. Dickey

"We can also partner with primary care providers, provide education for our hospitalist staff, and work with in-home care supports for patients such as these, who otherwise might end up in a skilled nursing facility – even though they'd rather be at home," he said.

Innovations at Northwell Health

Northwell Health, a multihospital comprehensive health system serving the New York City metro area and Long Island, has shown

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innovative leadership in addressing social factors. The 23-hospital system initiated in early 2019 a 15-item Self-Reported Social Determinants Screening Tool, which is now used with hospitalized patients to connect them with the support they need to fully recover and avoid readmissions.

Northwell is also providing professional education on social determinants for different constituencies across its system, said Johanna Martinez, MD, MS, a hospitalist and GME Director of Diversity and Health Equity at the Zucker School of Medicine at Hofstra/Northwell. A day-long training retreat was offered to GME faculty, and learning platforms have been developed for physicians, social workers, nurses, and others.

"One of the questions that comes up is that, if you find social needs, what do you do about them?" Dr. Martinez explained. That's more a difficult challenge, she said, so at Northwell, orthopedic surgeons are now asking patients questions like: "What's going to happen when you go home? What are your social supports? Can you get to the physical therapist's office?"

Another example of Northwell's innovations is its Food as Health Program, initially piloted at Long Island Jewish Hospital in Valley Stream, N.Y. Hospitalized patients are asked two questions using a validated screening tool called the Hunger Vital Sign to identify their food insecurities.[8] Those who answer yes are referred to a dietitian, and if they have a nutrition-related diagnosis, they enter the multidisciplinary wraparound program.

A key element is the food and health center, located on the hospital campus, where they can get food to take home and referrals to other services, with culturally tailored, disease-specific food education incorporated into the discharge plan. One of the partnering organizations is Island Harvest Food Bank, which helps about 1 in every 10 residents of Long Island with their food insecurity issues.

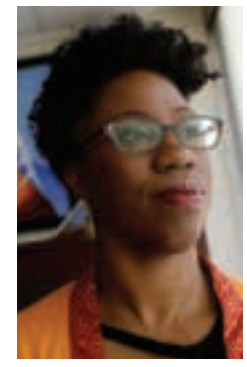
"When I talk to clinicians, most of us went into medicine to save lives and cure people. Yet the research shows that, no matter who we are, we can't do the best work that our patients need unless we consider their social determinants," Dr. Martinez said. Ultimately, she noted, there is a need to change the culture of health care. "We have to create system change, reimbursement change, policy change."

> *"The research shows that, no matter who we are, we can't do the best work that our patients need unless we consider their social determinants."*
>
> *– Dr. Martinez*

Omolara Uwemedimo, MD, MPH, associate professor of pediatrics and occupational medicine at Northwell and a former nocturnist, said the treatment of illness and health improvement don't begin in the hospital, they begin in the community. Identifying where people are struggling and what communities they come from requires a broader view of the provider's role. "Are patients who are readmitted to the hospital generally coming from certain demographics or from certain zip codes?" she asked. "Start there. How can we better connect with those communities?"

Education as key to change

In 2020 and beyond, hospitalists will hear more about the social determinants of health, Dr. Jacobs-Shaw concluded. "Without addressing those social determinants, we aren't going to be able to meaningfully impact outcomes or be effective stewards of health care costs – addressing the psychosocial factors and root causes of patients coming in and out of the hospital."



He added that self-education is key for hospitalists and the teams they work with – to be more aware of the link between health outcomes and social determinants. Guidelines and other resources on social determinants of health are available from the American College of Physicians and the American Association of Family Physicians. ACP issued a position paper on addressing social determinants of health to improve patient care, while AAFP has a research page on its website dedicated to social determinants of health, highlighting a number of initiatives and resources for physicians and others.[9]

The American Hospital Association has produced fact sheets on ICD-10CM code categories for social determinants of health, including 11 ICD-10 "Z" codes, numbered Z55-Z65, which can be used for coding interventions to address social determinants of health. Other experts are looking at how to adapt the electronic health record to capture sociodemographic and behavioral factors, and then trigger referrals to resources in the hospital and the broader community, and how to mobilize artificial intelligence and machine learning to better identify social needs.

"Our doctors really want to be able to take care of the whole patient, while being stewards of health care resources. But sometimes we feel powerless and wonder how we can have a bigger impact on people, on populations" Dr. Jacobs-Shaw said. "Remember it only takes one voice within an organization to start to elevate this topic."

> *"Are patients who are readmitted to the hospital generally coming from certain demographics or from certain zip codes? Start there."*
>
> *– Dr. Uwemedimo*

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Work the program for NP/PAs, and the program will work

A 'knowledge gap' in best practices exists

By Tracy Cardin, ACNP-BC, SFHM

Hospital medicine has been the fastest growing medical specialty since the term "hospitalist" was coined by Bob Wachter, MD, in the famous 1996 New England Journal of Medicine article (doi: 10.1056/NEJM199608153350713). The growth and change within this specialty is also reflected in the changing and migrating target of hospitals and hospital systems as they continue to effectively and safely move from fee-for-service to a payer model that rewards value and improvement in the health of a population – both in and outside of hospital walls.

In a short time, nurse practitioners and physician assistants have become a growing population in the hospital medicine workforce. The 2018 *State of Hospital Medicine Report* notes a 42% increase in 4 years, and about 75% of hospital medicine groups across the country currently incorporate NP/PAs within a hospital medicine practice. This evolution has occurred in the setting of a looming and well-documented physician shortage, a variety of cost pressures on hospitals that reflect the need for an efficient and cost-effective care delivery model, an increasing NP/PA workforce (the Department of Labor notes increases of 35% and 36% respectively by 2036), and data that indicate similar outcomes, for example, HCAHPS (the Hospital Consumer Assessment of Healthcare Providers and Systems), readmission, and morbidity and mortality in NP/PA-driven care.

This evolution, however, reveals a true knowledge gap in best practices related to integration of these providers. This is impacted by wide variability in the preparation of NPs – they may enter hospitalist practice from a variety of clinical exposures and training, for example, adult gerontology acute care, adult, or even, in some states, family NPs. For PAs, this is reflected in the variety of clinical rotations and pregraduate clinical exposure.

This variability is compounded, too, by the lack of standardization of hospital medicine practices, both with site size and patient acuity, a variety of challenges that drive the need for integration of NP/PA providers, and by-laws that define advanced practice clinical models and function.

In that perspective, it is important to define what constitutes a leading and successful advanced practice provider (APP) integration program. I would suggest:

1. **A structured and formalized transition-to-practice program for all new graduates and those new to hospital medicine.** This program should consist of clinical volume progression, formalized didactic congruent with the Society of Hospital Medicine Core Competencies, and a process for evaluating knowledge and decision making throughout the program and upon completion.
2. **Development of physician competencies related to APP integration.** Physicians are not prepared in their medical school training or residency to understand the differences and similarities of NP/PA providers. These competencies should be required and can best be developed through steady leadership, formalized instruction ,and accountability for professional teamwork.
3. **Allowance for NP/PA providers to work at the top of their skills and license.** This means utilizing NP/PAs as providers who care for patients – not as scribes or clerical workers. The evolution of the acuity of patients provided for may evolve with the skill set and experience of NP/PAs, but it will evolve – especially if steps 1 and 2 are in place.
4. **Productivity expectations that reach near physician level of volume.** In 2016 *State of Hospital Medicine Report* data, yearly billable encounters for NP/PAs were within 10% of that of physicians. I think 15% is a reasonable goal.
5. **Implementation and support of APP administrative leadership structure at the system/site level.** This can be as simple as having APPs on the same leadership committees as physician team members, being involved in hiring and training newer physicians and NP/PAs or as broad as having all NP/PAs report to an APP leader. Having an intentional leadership structure that demonstrates and reflects inclusivity and belonging is crucial.

Consistent application of these frameworks will provide a strong infrastructure for successful NP/PA practice.

Ms. Cardin is currently the vice president of advanced practice providers at Sound Physicians and serves on SHM's board of directors as its treasurer. This article appeared initially at the Hospital Leader, the official blog of SHM.

Developing guidance for patient movement requests

In hospital medicine, inpatients often request more freedom to move within the hospital complex for a wide range of both benign and potentially concerning reasons.

"Hospitalists are often confronted with a dilemma when considering these patient requests: how to promote patient-centered care and autonomy while balancing patient safety, concerns for hospital liability, and the delivery of timely, efficient medical care," said Sara Stream, MD, a hospitalist at the VA New York Harbor Healthcare System. Guidance from medical literature and institutional policies on inpatient movement are lacking, so Dr. Stream sought to develop a framework with which hospitalists can approach patient requests for liberalized movement.

For a small subset of patients, liberalized movement within the hospital may be clinically feasible: those who are medically, physically, and psychiatrically stable enough to move off their assigned floors without inordinate risk. "For the rest of inpatients, movement outside their monitored inpatient settings may interfere with appropriate medical care and undermine the indications for acute hospitalization," Dr. Stream said.

Creating institutional policy that identifies relevant clinical, legal, and ethical considerations will allow requests for increased movement to be evaluated systematically and transparently.

"When patients request liberalized movement, hospitalists should consider the requests systematically: first to identify the intent behind requests, and then to follow a framework to determine whether increased movement would be safe and allow appropriate medical care without creating additional risks," Dr. Stream said.

Hospitalists should assess individual patient requests for liberalized movement and work with other physicians, nurses, hospital administration, and risk management to devise pertinent policy on this issue that is specific to their institutions. By creating clear guidelines, providers will spend less time managing each individual request to leave the floor because they have a systematic strategy for making consistent decisions.

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The measles comeback of 2019

By Therese Borden
MDedge News

Measles made a comeback in 2019.

The Centers for Disease Control and Prevention reported that, as of Dec. 5, 2019, 1,276 individual cases of measles were confirmed in 31 states, the largest number since 1992. This number is a major uptick in cases, compared with previous years since 2000 when the CDC declared measles eliminated from the United States. No deaths have been reported for 2019.

Three-quarters of these cases in 2019 were linked to recent outbreaks in New York and occurred in primarily in underimmunized, close-knit communities and in patients with links to international travel. A total of 124 of the people who got measles this year were hospitalized, and 61 reported having complications, including pneumonia and encephalitis. The overall median patient age was 6 years (31% aged 1-4 years, 27% aged 5-17 years, and 29% aged at least 18 years).

The good news is that most of these cases occurred in unvaccinated patients. The national vaccination rate for the almost 4 million kindergartners reported as enrolled in 2018-2019 was 94.7% for two doses of the MMR vaccine, falling just short of the CDC recommended 95% vaccination rate threshold. The CDC reported an approximate 2.5% rate of vaccination exemptions among school-age children.

The bad news is that, despite the high rate of MMR vaccination rates among U.S. children, there are gaps in measles protection in the U.S. population because of factors leaving patients immunocompromised and antivaccination sentiment that has led some parents to defer or refuse the MMR.

In addition, adults who were vaccinated prior to 1968 with either inactivated measles vaccine or measles vaccine of unknown type may have limited immunity. The inactivated measles vaccine, which was available in 1963-1967, did not achieve effective measles protection.

A global measles surge

While antivaccination sentiment contributed to the 2019 measles cases, a more significant factor may be the global surge of measles. More than 140,000 people worldwide died from measles in 2018, according to the World Health Organization and the CDC.

"[Recent data on measles indicate] that during the first 6 months of the year there have been more measles cases reported worldwide than in any year since 2006. From Jan. 1 to July 31, 2019, 182 countries reported 364,808 measles cases to the WHO. This surpasses the 129,239 reported during the same time period in 2018. WHO regions with the biggest increases in cases include the African region (900%), the Western Pacific region (230%), and the European region (150%)," according to a CDC report.

Studies on hospitalization and complications linked to measles in the United States are scarce, but two outbreaks in Minnesota (2011 and 2017) provided some data of what to expect if the measles surge continues into 2020. The investigators found that poor feeding was a primary reason for admission (97%); additional complications included otitis media (42%), pneumonia (30%), and tracheitis (6%). Three-quarters received antibiotics, 30% required oxygen, and 21% received vitamin A. Median length of stay was 3.7 days (range, 1.1-26.2 days) (Pediatr Infect Dis J. 2019 Jun;38[6]:547-52. doi: 10.1097/INF.0000000000002221).

'Immunological amnesia'

Infection with the measles virus appears to reduce immunity to other pathogens, according to a paper published in Science (2019 Nov 1;366[6465]599-606).

The hypothesis that the measles virus could cause "immunological amnesia" by impairing immune memory is supported by early research showing children with measles had negative cutaneous tuberculin reactions after having previously tested positive.

In this study, researchers compared the levels of around 400 pathogen-specific antibodies in blood samples from 77 unvaccinated children, taken before and 2 months after natural measles infection, with 5 unvaccinated children who did not contract measles. A total of 34 children experienced mild measles, and 43 had severe measles.

They found that the samples taken after measles infection showed "substantial" reductions in the number of pathogen epitopes, compared with the samples from children who did not get infected with measles.

This amounted to approximately a 20% mean reduction in overall diversity or size of the antibody repertoire. However, in children who experienced severe measles, there was a median loss of 40% (range, 11%-62%) of antibody repertoire, compared with a median of 33% (range, 12%-73%) range in children who experienced mild infection. Meanwhile, the control subjects retained approximately 90% of their antibody repertoire over a similar or longer time period. Some children lost up to 70% of antibodies for specific pathogens.

Maternal-acquired immunity

In another study of measles immunity, maternal antibodies were found to be insufficient to provide immunity to infants after 6 months.

The study of 196 infants showed that maternal measles antibodies had dropped below the protective threshold by 3 months of age – well before the recommended age of 12-15 months for the first dose of MMR vaccine.

The odds of inadequate protection doubled for each additional month of age, Michelle Science, MD, of the University of Toronto and associates reported in Pediatrics (2019 Dec 1. doi: 10.1542/peds.2019-0630).

"The widening gap between loss of maternal antibodies and measles vaccination described in our study leaves infants vulnerable to measles for much of their infancy and highlights the need for further research to support public health policy," Dr. Science and colleagues wrote.

The researchers randomly selected 25 samples for each of eight different age groups: up to 30 days old, 1 month (31-60 days), 2 months (61-89 days), 3 months (90-119 days), 4 months, 5 months, 6-9 months, and 9-11 months.

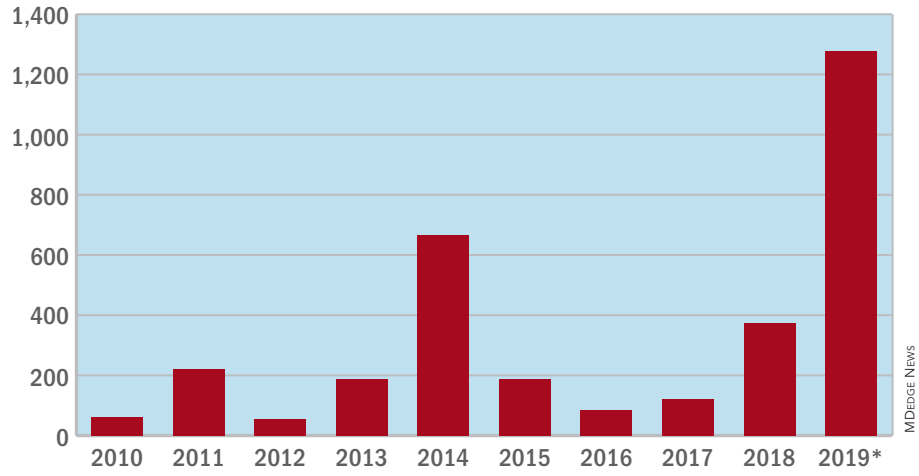
Just over half the babies (56%) were male, and 35% had an underlying condition, but none had conditions that might affect antibody levels. The conditions were primarily a developmental delay or otherwise affecting the central nervous system, liver, or gastrointestinal function. Mean maternal age was 32 years.

When the researchers calculated the predicted standardized mean antibody titer for infants with a mother aged 32 years, they determined their mean to be 541 mIU/mL at 1 month, 142 mIU/mL at 3 months (below the measles threshold of susceptibility of 192 mIU/mL), and 64 mIU/mL at 6 months. None of the infants had measles antibodies above the protective threshold at 6 months old, the authors noted.

Children's odds of susceptibility to measles doubled for each additional month of age, after adjustment for infant sex and maternal age (odds ratio, 2.13). Children's likelihood of susceptibility to measles modestly increased as maternal age increased in 5-year increments from 25 to 40 years.

Children with an underlying conditions had greater susceptibility to measles (83%), compared with those without a comorbidity (68%, P = .03). No difference in susceptibility existed between males and females or based on gestational age at birth (ranging from 37 to 41 weeks).

Number of measles cases reported to the CDC, 2010-2019



*Cases as of Dec. 5.

Source: National Center for Immunization and Respiratory Diseases, Division of Viral Diseases

ID consult for *Candida* bloodstream infections

By Mark S. Lesney
MDedge News

Clinicians managing patients who have *Candida* bloodstream infection should consider an infectious disease (ID) consultation, findings from a large retrospective study suggest.

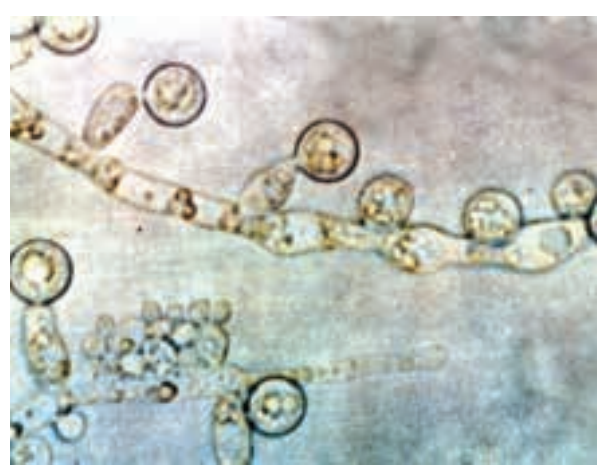
Mortality attributable to *Candida* bloodstream infection ranges between 15% and 47%, and delay in initiation of appropriate treatment has been associated with increased mortality. Previous small studies showed that ID consultation has conferred benefits to patients with *Candida* bloodstream infections.

Carlos Mejia-Chew, MD, and colleagues from Washington University, St. Louis, sought to explore this further by performing a retrospective, single-center cohort study of 1,691 patients aged 18 years or older with *Candida* bloodstream infection from 2002 to 2015. They analyzed demographics, comorbidities, predisposing factors, all-cause mortality, antifungal use, central-line removal, and ophthalmological and echocardiographic evaluation in order to compare 90-day all-cause mortality between individuals with and without an ID consultation.

They found that those patients who received an ID consult for a *Candida* bloodstream infection had a significantly lower 90-day mortality rate than did those who did not (29% vs. 51%).

With a model using inverse weighting by the propensity score, they found that ID consultation was associated with a hazard ratio of 0.81 for mortality (95% confidence interval, 0.73-0.91; *P* less than .0001).

In the ID consultation group, the median duration of antifungal therapy was significantly longer (18 vs. 14 days; *P* less than .0001); central-line removal was significantly more common (76% vs. 59%; *P* less than .0001); echocardiography use was more frequent (57% vs. 33%; *P* less than .0001); and ophthalmological examinations were performed more often (53% vs. 17%; *P* less than .0001). Importantly, fewer patients in the ID consultation group were untreated (2% vs. 14%; *P* less than .0001).



GRAHAM COLM/WIKIMEDIA COMMONS

In an accompanying commentary, Katrien Lagrou, MD, and Eric Van Wijngaerden, MD, of the department of microbiology, immunology, and transplantation, University Hospitals Leuven (Belgium) stated: "We think that the high proportion of patients (14%) with a *Candida* bloodstream infection who did not receive any antifungal treatment and did not have an infectious disease consultation is a particularly alarming finding. ... Ninety-day mortality in these untreated patients was high (67%)."

"We believe every hospital should have an expert management strategy addressing all individual cases of candidaemia. The need for such expert management should be incorporated in all future candidaemia management guidelines," they concluded.

The study was funded by the Astellas Global Development Pharma, the Washington University Institute of Clinical and Translational Sciences, and the Agency for Healthcare Research and Quality. Several of the authors had financial connections to Astellas Global Development or other pharmaceutical companies. Dr. Lagrou and Dr. Van Wijngaerden both reported receiving personal fees and nonfinancial support from a number of pharmaceutical companies, but all outside the scope of the study.

Key Clinical Question

When is a troponin elevation an acute myocardial infarction?

Misdiagnosis can have 'downstream repercussions'

By Jessica Nave, MD, and Abhinav Goyal, MD, MHS, FACC

Hospitalists encounter troponin elevations daily, but we have to use clinical judgment to determine if the troponin elevation represents either a myocardial infarction, or a non-MI troponin elevation (i.e., nonischemic myocardial injury).

It is important to remember that an MI specifically refers to myocardial injury due to acute myocardial ischemia to the myocardium. This lack of blood supply can be due to an acute absolute or relative deficiency in coronary artery blood flow. However, there are also many mechanisms of myocardial injury unrelated to reduced coronary artery blood flow, and these should be more appropriately termed non-MI troponin elevations.

Historically, when an ischemic mechanism of myocardial injury was suspected, providers would categorize troponin elevations into ST-segment elevation MI (STEMI) versus non-STEMI (NSTEMI) based on the electrocardiogram (ECG). We would further classify the NSTEMI into type 1 or type 2, depending on the mechanism of injury. The term "NSTEMI" served as a "catch-all" term to describe both type 1 NSTEMIs and type 2 MIs, but that classification system is no longer valid.

As of Oct. 1, 2017, ICD-10 and the Centers for Medicare & Medicaid Services have a new ICD-10 diagnosis code for type 2 MI (I21.A1), distinct from NSTEMI (I21.4) based on updated definitions from the American College of Cardiology, American Heart Association, European Society of Cardiology, and World Heart Federation. The term "NSTEMI" should be used only when referring to a type 1 MI not when referring to a type 2 MI.[1]

The diagnosis of a type 1 MI (STEMI and NSTEMI) is supported by the presence of an acute coronary thrombus or plaque rupture/erosion on coronary angiography or a strong suspicion for these when angiography is unavailable or contraindicated (Figure 1). Type 1 MI (also referred to as spontaneous MI) is generally a primary reason (or "principal" diagnosis) for a patient's presentation to a hospital.[2] Please note that a very high or rising troponin level alone is not diagnostic for a type 1 or type 2 NSTEMI. The lab has to be taken in the context of the patient's presentation and other supporting findings.

The diagnosis of a type 1 myocardial infarction is supported by evidence or strong suspicion of acute coronary artery thrombus or plaque rupture/erosion.

In contrast to a type 1 MI (STEMI and NSTEMI), a type 2 MI results from an imbalance between myocardial oxygen supply and demand unrelated to acute coronary artery thrombosis or plaque rupture. A type 2 MI is a relative (as opposed to an absolute) deficiency in coronary artery blood flow triggered by an abrupt increase in myocardial oxygen demand, drop in myocardial blood supply, or both. In type 2 MI, myocardial injury occurs secondary to an underlying process, and therefore requires correct documentation of the underlying cause as well.

Common examples of underlying causes of type 2 MI include acute blood loss anemia (e.g., GI bleed), acute hypoxia (e.g., COPD exacerbation), shock states (cardiogenic, hypovolemic, hemorrhagic, or septic), coronary vasospasm (e.g., spontaneous or cocaine-induced), and bradyarrhythmias. Patients with type 2 MI often have a history of fixed obstructive coronary disease, which when coupled with the acute trigger facilitates the type 2 MI; however, underlying coronary artery disease (CAD) is not always present.

Diagnosing a type 2 MI requires evidence of acute myocardial ischemia (Figure 2) with an elevated troponin but must also have at least one of the following[3]:

- Symptoms of acute myocardial ischemia such as typical chest pain.
- New ischemic ECG changes.
- Development of pathological Q waves.
- Imaging evidence of new loss of viable myocardium, significant reversible perfusion defect on nuclear imaging, or new regional wall motion abnormality in a pattern consistent with an ischemic etiology.

Distinguishing a type 1 NSTEMI from a type 2 MI depends mainly on the clinical context and clinical judgment. A patient whose presenting symptoms include acute chest discomfort, acute ST–T-wave changes, and a rise in troponin would be suspected of having a type 1 NSTEMI. However, in a patient presenting with other or vague complaints where an elevated troponin was found amongst a battery of tests, a type 2 MI may be favored, particularly if there is evidence of an underlying trigger for a supply-demand mismatch. In challenging cases, cardiology consultation can help determine the MI type and/or the next diagnostic and treatment considerations.

When there is only elevated troponin levels (or even a rise and fall in troponin) without new symptoms or ECG/imaging evidence of myocardial ischemia, it is most appropriate to document a non-MI troponin elevation due to a nonischemic mechanism of myocardial injury.

Figure 1. Classification of MI

MI Type	Classification
1	STEMI (acute coronary artery thrombosis) NSTEMI (acute coronary artery plaque rupture/erosion)
2	Supply/demand mismatch (heterogeneous underlying causes)
3	Sudden cardiac death with ECG evidence of acute myocardial ischemia before cardiac troponins could be drawn
4	MI due to percutaneous coronary intervention
5	MI due to coronary artery bypass grafting

Source: Dr. Nave and Dr. Goyal

MDEDGE NEWS

Dr. Nave

Dr. Goyal

Dr. Nave is assistant professor of medicine in the division of hospital medicine at Emory University, Atlanta. Dr. Goyal is associate professor of medicine (cardiology), at Emory University, and chief quality officer, Emory Heart and Vascular Center, Emory Healthcare. He is also codirector of nuclear cardiology at Emory University Hospital.

Non-MI troponin elevation (nonischemic myocardial injury)

The number of conditions known to cause myocardial injury through mechanisms other than myocardial ischemia is growing, especially in the current era of high-sensitivity troponin assays.[4]

Common examples of underlying causes of non-MI troponin elevation include:

- Acute (or chronic) systolic or diastolic heart failure usually due to acute ventricular wall stretch/strain. Troponin elevations tend to be mild, with more indolent (or

even flat) troponin trajectories.

- Pericarditis and myocarditis due to direct injury from myocardial inflammation.
- Cardiopulmonary resuscitation (CPR) due to physical injury to the heart from mechanical chest compressions and from electrical shocks of external defibrillation.
- Stress-induced (takotsubo) cardiomyopathy: stress-induced release of neurohormonal factors and catecholamines that cause direct myocyte injury and transient dilatation of the ventricle.
- Acute pulmonary embolism: result of acute right ventricular wall stretch/strain, not from myocardial ischemia.
- Sepsis without shock: direct toxicity of circulating cytokines to cardiac myocytes. In the absence of evidence of shock and symptoms/signs of myocardial ischemia, do not document type 2 MI.
- Renal failure (acute kidney injury or chronic kidney disease): multiple etiologies, but at least partially related to reduced renal clearance of troponin. In general, renal failure in the absence of symptoms/signs of ischemia is best classified as a non-MI troponin elevation. End-stage renal disease patients who present with volume overload due to missed dialysis also typically have a non-MI troponin elevation.
- Stroke/intracranial hemorrhage: Mechanisms of myocardial injury and troponin elevation are incompletely understood, but may include catecholamine surges that injure the heart.

"Misdiagnosing an MI when the patient does not have one can have multiple downstream repercussions. Because it stays on their medical record, it impacts their ability to get insurance."

Some underlying conditions can cause a type 2 MI or a non-MI troponin elevation depending on the clinical context. For example, hypertensive emergency, severe aortic valve stenosis, hypertrophic cardiomyopathy, and tachyarrhythmias (including atrial fibrillation with rapid ventricular response) may cause increased myocardial oxygen demand, and in patients with underlying CAD, could precipitate a type 2 MI.

However, these same conditions could cause a non-MI troponin elevation in patients without CAD and could also cause myocardial injury and troponin release by causing acute left ventricular stretch/strain. Distinguishing the diagnose of type 2 MI vs. non-MI troponin elevation depends on documenting whether there are ancillary ischemic symptoms, ECG findings, imaging, and/or cath findings of acute myocardial ischemia.

Case examples

1. A 60-year-old male presents with fever, cough, shortness of breath, and an infiltrate on chest x-ray and is diagnosed with sepsis secondary to pneumonia. His initial troponin of 0.07 (normal < 0.05) rises to 0.11, peaks at 0.23, then subsequently trends down.

While some may be tempted to diagnose a type 2 MI, remember that sepsis can cause direct myocardial cell injury via direct cell toxicity. Unless this patient had at least one additional criteria (anginal chest pain, new ischemic ECG changes, or imaging evidence of new loss of viable myocardium, which does not recover with treatment of sepsis), this was most likely myocardial injury via direct cell toxicity, and should be documented as a non-MI troponin elevation due to sepsis without shock.

If there were ischemic ECG changes and the patient had chest pain, one would have to use clinical suspicion to differentiate between a type 1 NSTEMI and a type 2 MI. If there is a high clinical suspicion for an acute plaque rupture/thrombus, one would call it an NSTEMI and would have to document treatment as such (e.g., start heparin drip). Again, cardiology consultation can be helpful in cases where it may be hard to decide how to manage. Many times, the true mechanism is not determined until the patient is taken to the cath lab and if no acute plaque rupture is seen, then it was likely a type 2 MI.

2. A 70-year-old male with chronic systolic heart failure, noncompliant with medications, presents with 3 days of dyspnea on exertion and lower extremity edema. He had no chest discomfort. Exam shows bibasilar crackles and hepatojugular reflux. ECG shows no ischemic changes. Serial troponin values over 48 hours were 0.48, 0.58, 0.51. A transthoracic echocardiogram reveals an left ventricular ejection fraction of 40% with poor movement in the apex, similar to his prior echo.

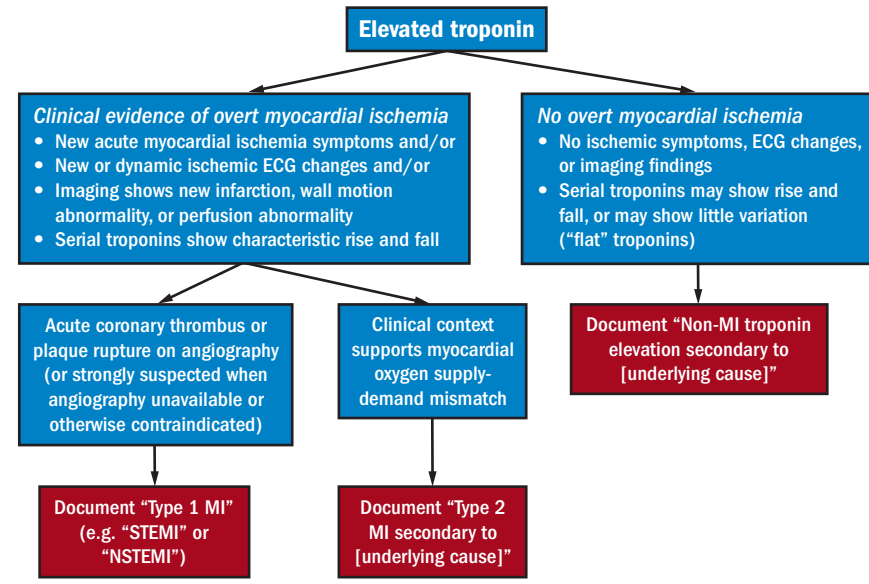
This patient had no overt evidence of ischemia (no chest pain, ischemic ECG, or imaging changes) so the troponin elevation was most likely a non-MI troponin elevation secondary to acute or chronic systolic heart failure (in which the mechanism of troponin elevation is left ventricular chamber stretch from volume overload, and not demand ischemia). Generally, it is uncommon for a heart failure exacerbation to cause a type 2 MI.

Importance of a correct diagnosis

Misdiagnosing an MI when the patient does not have one can have multiple downstream repercussions. Because it stays on their medical record, it impacts their ability to get insurance and their premium costs. We expose patients to additional medications (e.g., dual-antiplatelet therapy, statins), which can have adverse effects. As a result, it is very important to classify the etiology of the troponin elevation and treat accordingly.

Finally, when we incorrectly label a patient as having an MI, this can impact billing and reimbursement, DRG denials, insurance premiums, and quality metrics for both the hospital and the physicians. Hospitals' 30-day readmission rates for acute MI will suffer and quality metrics can be significantly impacted. We must be diligent and as precise as possible with our diagnoses and documentation to ensure the maximum benefit for our patients and our health care system.

Figure 2. Is my patient with elevated troponin having an MI?



Source: Dr. Nave and Dr. Goyal

Key Points

- A diagnosis of a type 1 MI is supported by evidence or strong suspicion of acute coronary artery thrombus or plaque rupture/erosion.
- A very high troponin level alone is not diagnostic for a type 1 or type 2 MI. It has to be contextualized with the patient's presentation and other supporting findings.
- Type 2 MI is a mismatch between myocardial oxygen supply and demand unrelated to acute coronary thrombosis or plaque rupture triggered by an abrupt increase in myocardial oxygen demand, drop in myocardial blood supply, or both. Type 2 MI should be documented along with its underlying cause.
- For diagnosis of an MI (either type 1 or type 2 MI), in addition to the troponin elevation, the patient must have symptoms of acute ischemia, ischemic ECG findings, and/or imaging suggestive of new ischemia.
- An elevated troponin level without new symptoms or ECG/imaging evidence of myocardial ischemia should be documented as a non-MI troponin elevation secondary to an underlying cause.

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In the Literature

Clinician reviews of HM-centric research

By Dani Babbel, MD; Claire Ciarkowski, MD; Natalie Como, MD; John Gerstenberger, MD; Devin Horton, MD; Joshua LaBrin, MD, SFHM; Austin Rupp, MD

University of Utah, Salt Lake City

IN THIS ISSUE

By Dani Babbel, MD

1 Cardiac rehab after cardiac valve surgery associated with reduced mortality

CLINICAL QUESTION: Does cardiac rehabilitation (CR) improve outcomes for patients after undergoing cardiac valve surgery (CVS)?
BACKGROUND: National guidelines recommend CR after CVS. However, neither enrollment in CR nor its benefits have been well described in this population.
STUDY DESIGN: Observational cohort study.
SETTING: Enrolled Medicare beneficiaries residing in the United States in 2014.
SYNOPSIS: There were 41,369 Medicare patients who underwent CVS and met the study requirements; of these, 43.2% enrolled in CR programs. Those who had concomitant coronary artery bypass grafting (CABG) surgery or who resided in the Midwest region of the United States were more likely to enroll in CR. Asian, black, and Hispanic patients were less likely to enroll in CR. Enrollment in CR after CVS was associated with a decreased risk of 1-year hospitalization (hazard ratio, 0.66; 95% confidence interval, 0.63-0.69). CR utilization was also associated with a decrease in 1-year mortality after CVS (HR, 0.39; 95% CI, 0.35-0.44).

Enrollment rates in CR after CVS were lower than that of heart transplant patients, but higher than that for patients with systolic heart failure or after CABG. Major study limitations were the lack of generalizability to younger patients because all patients examined were older than 64 years.
BOTTOM LINE: Racial and geographic factors influence the rate of enrollment in CR for patients undergoing CVS. All patients should be encouraged to participate in CR after CVS because it is associated with reduced 1-year mortality and risk of hospitalization.
CITATION: Patel DK et. al. Association of cardiac rehabilitation with decreased hospitalization and mortality risk after cardiac valve surgery. JAMA Cardiol. 2019 Oct 23. doi: 10.1001/jamacardio.2019.4032.

2 Emergent ERCP in acute cholangitis linked with better outcomes

CLINICAL QUESTION: Are outcomes better for patients with acute cholangitis (AC) if endoscopic retrograde cholangiopancreatography (ERCP) is done emergently (within 48 hours) versus urgently (more than 48 hours)?
BACKGROUND: AC in its most severe form is associated with a high mortality rate. Most patients respond to medical management involving intravenous hydration and antibiotics, though a sizable portion require biliary drainage. Current guidelines advocate for urgent drainage depending on the severity of AC, though do not specify optimal timing. Existing literature is conflicting on when ERCP should ideally be done for AC.
STUDY DESIGN: Systematic review and meta-analysis.
SETTING: Literature search involving PubMed, Medline, and Embase databases.
SYNOPSIS: Nine studies with 7,534 patients were included in the final meta-analysis. Emergent ERCP was associated with a lower in-hospital mortality (IHM; odds ratio, 0.52; 95% confidence interval, 0.28-0.98) and shorter length of stay (LOS; mean difference, –2.87 days; 95% CI, –1.55 to –4.18), compared to urgent ERCP. The IHM mortality difference was true for both patients with severe AC (as defined by evidence of end-organ dysfunction) and mild-moderate AC. There was a trend toward lower 30-day mortality in patients who underwent emergent ERCP, though it did not reach statistical significance.

The studies included in the analysis were observational studies, so no causal relationship can be established. Only two of the nine studies reported outcome differences stratified by severity of presentation. Etiology of the AC was inconsistently reported amongst studies.
BOTTOM LINE: Emergent ERCP appears to be associated with reduced mortality and LOS in patients presenting with AC, though larger randomized controlled trials are needed to better delineate the optimal timing for biliary drainage in these patients.
CITATION: Iqbal U et al. Emergent versus urgent ERCP in acute cholangitis: A systematic review and meta-analysis. Gastrointes Endosc. 2019 Oct 16. doi: 10.1016/j.gie.2019.09.040.

Dr. Babbel is a hospitalist and assistant professor of medicine at the University of Utah, Salt Lake City.

By Claire Ciarkowski, MD

3 Depression screening after ACS does not change outcomes

CLINICAL QUESTION: Does systematic screening for depression in acute coronary syndrome (ACS) survivors affect quality of life and depression?
BACKGROUND: Depression after ACS is common and is associated with increased mortality. Professional societies have recommended routine depression screening in these patients; however, this has not been consistently implemented because there is a lack of data to support routine screening.


Dr. Ciarkowski

STUDY DESIGN: Multicenter randomized clinical trial.
SETTING: Four geographically diverse health systems in the United States.
SYNOPSIS: In the CODIACS-QoL trial, 1,500 patients were randomized to three groups within 12 months of documented ACS: depression screening with notification to primary care and treatment, screening and notification to primary care, and no screening. Only 7.7% of the patients in the screen, notify, and treat group and 6.6% of screen and notify group screened positive for depression. There were no differences for the primary outcome of quality-adjusted life-years or the secondary outcome of depression-free days between groups. Additionally, there was no difference in mortality or patient-reported harms of screening between groups. The study excluded patients who already had a history of depression, psychiatric history, or other severe life-threatening medical conditions, which may have affected the outcomes.

Depression remains a substantial factor in coronary disease and quality of life; however, systematic depression screening appears to have limited population-level benefits.
BOTTOM LINE: Systematic depression screening with or without treatment offerings did not alter quality of life, depression-free days, or mortality in patients with ACS.
CITATION: Kronish IM et al. Effect of depression screening after acute coronary syndrome on quality of life. JAMA Intern Med. 2020;180(1):45-53.

4 Family-involved interventions reduce postoperative delirium

CLINICAL QUESTION: Is the Tailored, Family-Involved Hospital Elder Life Program (t-HELP) effective in reducing the incidence of postoperative delirium (POD) in older patients after noncardiac surgery?
BACKGROUND: Postoperative delirium is common in older patients undergoing surgery and often leads to complications including longer length of stay (LOS), increased mortality, functional decline, and dementia. The volunteer-based Hospital Elder Life Program (HELP) is one of the most widely implemented prevention tools to reduce POD; however, different cultures may not use volunteers in their hospital systems.
STUDY DESIGN: Randomized clinical trial.
SETTING: West China Hospital in Chengdu.
SYNOPSIS: This Chinese-based clinical trial evaluated 281 patients aged 70 years or older who underwent elective surgery and were randomized to either t-HELP units or usual-care units. t-HELP patients received three universal protocols that included family-driven interventions of orientation, therapeutic activities, and early mobilization protocols, as well as targeted protocols based on delirium risk factors, while control participants received usual nursing care. The incidence of POD was significantly reduced in the t-HELP group, compared with the control group (2.6% vs. 19.4%), which was also associated with a shorter LOS. Patients were also noted to have less cognitive and functional decline that was sustained after discharge.
BOTTOM LINE: For hospitals that do not use volunteers in delirium prevention, involving family appears to be effective in reducing POD and maintaining physical and cognitive function post operatively.
CITATION: Wang YY et al. Effect of the Tailored, Family-Involved Hospital Elder Life Program on postoperative delirium and function in older adults: A randomized clinical trial. JAMA Intern Med. 2019 Oct 21. doi: 10.1001/jamainternmed.2019.4446.

Dr. Ciarkowski is a hospitalist and clinical instructor of medicine at the University of Utah, Salt Lake City.

By Natalie Como, MD

5 Dapagliflozin may cut risk of HF hospitalization in patients with type 2 diabetes

CLINICAL QUESTION: What is the Food and Drug Administration–approved indication for dapagliflozin (Farxiga)?
BACKGROUND: Dapagliflozin is a selective inhibitor of sodium-glucose transporter 2 (SGLT2) in the kidney; the drug blocks glucose reabsorption in the proximal tubule. It is taken once daily by mouth. An initial study sponsored by AstraZeneca was published January 2019 in the New England Journal of Medicine – "Dapagliflozin and cardiovascular outcomes in type 2 diabetes." Until recently there was not an FDA-approved indication for the drug.
STUDY DESIGN: Randomized, double-blind, placebo-controlled trial.


Dr. Como

SETTING: 882 clinical sites in 33 countries.
SYNOPSIS: The study randomized approximately 17,000 patients to receive either dapagliflozin or placebo in addition to any other diabetes treatments prescribed by their physician. This study demonstrated its primary safety outcome, which was that patients on dapagliflozin did not have any more major adverse cardiac events (MACE), compared with placebo. There were two primary efficacy outcomes. First, there was no change in MACE with dapagliflozin, compared with placebo. Second, and pertinent to this drug's approval, was that dapagliflozin reduced risk of hospitalization for heart failure (HF) from 5.8% to 4.9%, compared to placebo; this includes both HF with both preserved and reduced ejection fractions.
BOTTOM LINE: Dapagliflozin now has an FDA-approved indication to reduce hospitalizations for HF in patients with type 2 diabetes. Based on this study, the number needed to treat with dapagliflozin is 111 patients to prevent one hospitalization for HF.
CITATION: Farxiga approved in the US to reduce the risk of hospitalization for heart failure in patients with type-2 diabetes. AstraZeneca Press Release, 2019 Oct 21.

Dr. Como is a hospitalist and clinical instructor of medicine at the University of Utah, Salt Lake City.

By John Gerstenberger, MD

6 Metoprolol increases severity, but not risk, of COPD exacerbations

CLINICAL QUESTION: Does metoprolol affect time until exacerbation in patients with moderate to severe chronic obstructive pulmonary disease (COPD) without an alternative indication for beta-blocker use?
BACKGROUND: Beta-blockers are underutilized in patients with both COPD and established cardiovascular indications for beta-blocker therapy, despite evidence suggesting overall benefit. Prior observational studies have associated beta-blockers with improved outcomes in COPD in the absence of cardiovascular indications; however, this has not been previously evaluated in a randomized trial.
STUDY DESIGN: Placebo-controlled, double-blind, prospective, randomized trial.
SETTING: A total of 26 centers in the United States.
SYNOPSIS: The BLOCK COPD trial randomized more than 500 patients with moderate to severe COPD and no established indication for beta-blocker therapy to extended-release metoprolol or placebo. There was no significant difference in the primary endpoint of time until first exacerbation. While there was no difference in the overall risk of exacerbations of COPD, the trial was terminated early because of increased risk of severe or very severe exacerbations of COPD in the metoprolol group (hazard ratio, 1.91; 95% confidence interval, 1.20-2.83). These were defined as exacerbations requiring hospitalization and mechanical ventilation, respectively.

Importantly, this trial excluded patients with established indications for beta-blocker therapy, and study findings should not be applied to this population.
BOTTOM LINE: Metoprolol is not associated with increased risk of COPD exacerbations, but is associated with increased severity of COPD exacerbations in patients with moderate to severe COPD who have no established indications for beta-blockers.
CITATION: Dransfield MT et al. Metoprolol for the prevention of acute exacerbations of COPD. N Engl J Med. 2019 Oct 20. doi: 10.1056/NEJMoa1908142.

7 In-hospital mobility impairment in older MI patients predicts postdischarge functional decline

CLINICAL QUESTION: Does in-hospital mobility of older patients hospitalized for acute myocardial infarction predict overall functional decline after discharge?
BACKGROUND: The ability to independently perform daily activities

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is highly valued by patients, yet it is commonly impaired in older adults after hospitalization for MI. Risk of functional decline in this population is not well understood, but may relate to reduced mobility while hospitalized.

STUDY DESIGN: Prospective cohort.

SETTING: A total of 94 academic and community hospitals in the United States.

SYNOPSIS: More than 3,000 adults aged 75 years and older who were hospitalized for acute myocardial infarction were enrolled in the prospective cohort SILVER-AMI; 2,587 patients within this cohort were evaluated for in-hospital mobility with the Timed "Up and Go" test. At 6-month follow-up, loss of independent performance of activities of daily living (ADL) and of the ability to walk 0.25 miles were both associated in a dose-dependent manner with in-hospital mobility. Severe in-hospital mobility impairment was associated with an adjusted odds ratio of 5.45 (95% confidence interval, 3.29-9.01).

Dr. Gerstenberger

While in-hospital mobility is predictive of future functional decline in this population, this observational study cannot establish whether attempts to improve mobility in hospitalized patients will prevent future functional decline.

BOTTOM LINE: Lower performance on the Timed "Up and Go" test of mobility among older patients hospitalized for MI is associated with functional decline 6 months after hospitalization.

CITATION: Hajduk AM et al. Association between mobility measured during hospitalization and functional outcomes in older adults with acute myocardial infarction in the SILVER-AMI study. JAMA Intern Med. 2019 Oct 7. doi: 10.1001/jamainternmed.2019.4114.

Dr. Gerstenberger is a hospitalist and clinical assistant professor of medicine at the University of Utah, Salt Lake City.

By Devin Horton, MD

8 New guidelines on the diagnosis and treatment of adults with CAP

CLINICAL QUESTION: What are the most up-to-date, evidence-based recommendations for the diagnosis and treatment of community-acquired pneumonia (CAP)?

BACKGROUND: More than a decade has passed since the last CAP guidelines. Since then there have been new trials and epidemiological studies. There have also been changes to the process for guideline development. This guideline has moved away from the narrative style of guidelines to the GRADE format and PICO framework with hopes of answering specific questions by looking at the quality of evidence.

STUDY DESIGN: Multidisciplinary panel conducted pragmatic systemic reviews of high-quality studies.

SETTING: The panel revised and built upon the 2007 guidelines, addressing 16 clinical questions to be used in immunocompetent patients with radiographic evidence of CAP in the United States with no recent foreign travel.

SYNOPSIS: Changes from the 2007 guidelines are as follows: Sputum and blood cultures, previously recommended only in patients with severe CAP, are now also recommended for inpatients being empirically treated for *Pseudomonas* or methicillin-resistant *Staphylococcus aureus* (MRSA) and for those who have received IV antibiotics in the previous 90 days; use of procalcitonin is not recommended to decide whether to withhold antibiotics; steroids are not recommended unless being used for shock; HCAP categorization should be abandoned and need for empiric coverage of MRSA and *Pseudomonas* should be based on local epidemiology and local validated risk factors; B-lactam/macrolide is favored over fluoroquinolone for severe CAP therapy; and routine follow-up chest x-ray is not recommended.

Other recommendations include not routinely testing for urine pneumococcal or legionella antigens in nonsevere CAP; using PSI over CURB-65, in addition to clinical judgment, to determine need for inpatient care; using severe CAP criteria and clinical judgment for determining ICU need; not adding anaerobic coverage for aspiration pneumonia; and treating most cases of CAP that are clinically stable and uncomplicated for 5-7 days.

BOTTOM LINE: Given new data, updated recommendations have been made to help optimize CAP therapy.

CITATION: Metlay JP et al. Diagnosis and treatment of adults with community-acquired pneumonia: An official clinical practice guideline of the American Thoracic Society and Infectious Diseases Society of America. Am J Respir Crit Care Med. 2019 Oct 1;200(7):e45-67.

9 PCI and CABG for left main disease have equal outcomes at 5 years

CLINICAL QUESTION: In a patient with left main coronary disease, is percutaneous coronary intervention (PCI) or coronary artery bypass grafting (CABG) a better option when considering long-term (5-year) outcomes?

BACKGROUND: While PCI with drug-eluting stents has become more accepted as treatment for some patients with left main disease, long-term outcomes from randomized control trials comparing PCI with CABG have yet to be clearly established.

STUDY DESIGN: International, open-label, multicenter, randomized trial.

SETTING: A total of 126 sites in 17 countries.

SYNOPSIS: Patients with low or intermediate anatomical complexity with 70% visual stenosis of the left main coronary artery or 50%-70% stenosis by noninvasive testing were randomized to either PCI (948) or CABG (957). Dual-antiplatelet therapy was given to PCI patients and aspirin to CABG patients. At 5 years there was no significant difference in the rate of the composite of death, stroke, or myocardial infarction (22.0% with PCI vs. 19.2% with CABG; difference, 2.8 percentage points; 95%

Short Takes

Dual-antiplatelet therapy reduces graft failure after CABG

Network meta-analysis found that dual-antiplatelet therapy (aspirin with either clopidogrel or ticagrelor) was superior to aspirin alone in maintaining saphenous vein graft patency after coronary artery bypass graft surgery. No significant differences were found in rates of major bleeding, myocardial infarction, and death.

CITATION: Solo K et al. Antithrombotic treatment after coronary artery bypass graft surgery: Systemic review and network meta-analysis. BMJ. 2019;367:l5476.

CI, –0.9 to 6.5; *P* = .13). This was consistent across subgroups.

There were numerical differences in nonpowered secondary outcomes that may represent effects but should be interpreted cautiously: ischemia-driven revascularization (16.9% with PCI vs. 10% with CABG), transient ischemic attack plus stroke (3.3% with PCI vs. 5.2% with CABG), and death from any cause (3% with PCI vs. 9.9% with CABG). There was no significant difference in cardiovascular events, MI, or stroke.


Dr. Horton

One interesting limitation was that patients who had PCI were more commonly on dual-antiplatelet therapy and angiotensin converting–enzyme inhibitors, whereas CABG patients were more often on beta-blockers, diuretics, anticoagulants, and antiarrhythmics.

BOTTOM LINE: PCI and CABG treatments for left main disease have no significant difference in the composite outcome of death, stroke, or MI at 5 years.

CITATION: Stone GW et al. Five-year outcomes after PCI or CABG for left main coronary disease. N Engl J Med. 2019;381:1820-30.

Dr. Horton is a hospitalist and clinical instructor of medicine at the University of Utah, Salt Lake City.

By Austin Rupp, MD

10 The role of aspirin in primary prevention of cardiovascular disease

CLINICAL QUESTION: Does aspirin have a role in primary prevention of cardiovascular disease?

BACKGROUND: Previous studies have shown that aspirin reduces the relative risk of cardiovascular disease (CVD) but also increases the relative risk of bleeding. It is unclear if there are patients without known CVD in whom the absolute risk reduction of CVD outweighs the absolute risk of bleeding. Prognostic CVD and bleeding risk models allow for an assessment of absolute risks and primary preventive interventions.

STUDY DESIGN: Individualized risk-benefit analysis based on sex-specific risk scores and estimates from PREDICT cohort data.

SETTING: Primary care practices in New Zealand.

SYNOPSIS: Using the New Zealand–based PREDICT online tool, 245,048 patients had their CVD risk assessed and did not meet exclusion criteria. The online tool predicts CVD events avoided and bleeding events caused by aspirin. When one CVD event was equivalent to one major bleeding event, 2.5% of women and 12.1% of men were classified as benefiting from aspirin (more CVD events avoided than bleeding events caused). When one CVD event was equivalent to two major bleeding events, 21.4% of women and 40.7% of men were classified as benefiting from aspirin. The net-benefit subgroups were older, and had higher baseline 5-year CVD risk, fewer risk factors for bleeding, higher systolic blood pressure, and a higher total cholesterol to HDL cholesterol ratio. Ethnicity and socioeconomic index also influenced benefit or harm.

With use of the upper and lower limits of 95% confidence intervals for models, there were considerable ranges of benefit versus harm. Sex-specific risk scores and meta-analysis have intrinsic uncertainties and results potentially not generalizable outside New Zealand population. Ultimate decision to use aspirin requires shared decision making.

BOTTOM LINE: Some patients are likely to derive a net benefit from aspirin for primary prevention of CVD. Risk-benefit models with online tools can help providers and patients estimate these factors to inform shared decision making.

CITATION: Selak V et al. Personalized prediction of cardiovascular benefits and bleeding harms for aspirin for primary prevention, a benefit-harm analysis. Ann Intern Med. 2019;71(8):529-39.

11 Longitudinal associations between income changes and incident CVD

CLINICAL QUESTION: Is there an association between income change and cardiovascular disease (CVD)?

BACKGROUND: Low income is associated with CVD, although causality remains debated because low income is also associated with depression and negative health behaviors, which can be associated with CVD. For more robust causal inference, changes in income and their association with CVD must be observed.

STUDY DESIGN: Prospective observational cohort study.

SETTING: Four U.S. urban centers – Jackson, Miss.; suburbs of Minneapolis; Washington County, Md.; and Forsyth County, N.C.

SYNOPSIS: Among a large cohort of community-dwelling middle-aged adults, this study showed that negative income changes are associated with an increased incidence of CVD. Among 8,989 patients recruited from the four urban centers above, 10% experienced an income drop, 70% did not have a change in income, and 20% experienced an income increase over the first 6 years of the study. Patients were followed for a mean of 17 years, and those who experienced an income drop were found to have a 17% higher risk of incident CVD, whereas those who experienced an income increase had a 14% lower risk of CVD.

The study was limited by difficulties classifying income and its changes; the complicated nature of income, its relationship with other socioeconomic factors, and causation inferences; and the relatively short span over which income was monitored.

BOTTOM LINE: Income decrease is associated with an increased risk of incident CVD.

CITATION: Wang S et al. Longitudinal associations between income changes and incident cardiovascular disease, the atherosclerosis risk in communities study. JAMA Cardiol. 2019 Oct 9;4(12):1203-12.

Dr. Rupp is a hospitalist and clinical instructor of medicine at the University of Utah, Salt Lake City.

Note: *Dr. LaBrin is an associate professor of medicine at the University of Utah. He edited and assisted the authors with the reviews.*

Short Takes

Rivaroxaban versus vitamin K antagonist in antiphospholipid syndrome

In a randomized noninferiority trial, rivaroxaban did not show noninferiority to vitamin K antagonists in the secondary prevention of thrombosis in antiphospholipid syndrome. Recurrent thrombosis occurred in 11.6% of the rivaroxaban group and 6.3% of the vitamin K antagonist group (not statistically significant).

CITATION: Ordi-Ros J et al. Rivaroxaban versus vitamin K antagonist in antiphospholipid syndrome. Ann Intern Med. 2019;171(8):685-94.

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- 7 on/7 off schedule with 1 week of vacation per year
- Additional shifts paid at a premium

Available Opportunities:

Nocturnist, Greenville Memorial Hospital

- $340K base salary with $10K incentive bonus and CME stipend
- Up to $40K sign on bonus
- Minimum of 3 physician night coverage team
- Academic appointment and resident supervision opportunity
- Codes run by critical care team
- Full subspecialist back up

Nocturnist or Traditional Hospitalist, Baptist Easley Hospital

- $240-260K base salary with 45K incentive bonus and CME stipend for Traditional Hospitalist
- $320K base salary with $10K incentive bonus and CME stipend for Nocturnist
- Up to $40K sign on bonus for Nocturnist

Med-Peds Hospitalist or Nocturnist, Greer Memorial Hospital

- BC/BE in internal medicine-pediatrics
- $290K base salary with $45K incentive bonus and CME stipend for Med – Peds Hospitalist
- $340K base salary with $10K incentive bonus and CME stipend for Med – Peds Nocturnist
- Up to $40K sign on bonus
- Adult and pediatric specialist support in house or by phone
- Comfortable with IM procedures and managing critically ill patients

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Public Service Loan Forgiveness (PSLF) Program Qualified Employer

Please submit a letter of interest and CV to: Natasha Durham, Physician Recruiter,
Natasha.Durham@PrismaHealth.org, ph: 864-797-6114

Hospitalist Opportunities with Penn State Health

Penn State Health is a multi-hospital health system serving patients and communities across central Pennsylvania. We are seeking hospitalists and nocturnists interested in joining the Penn State Health family in various settings within our system.

What We're Offering:

- Academic Hospitalist and Nocturnist positions (Hershey, PA)
- Community Setting Hospitalist opportunities (Lancaster and Berks County positions)
- We'll foster your passion for patient care and cultivate a collaborative environment rich with diversity
- Commitment to patient safety in a team approach model
- Experienced hospitalist colleagues and collaborative leadership
- Salary commensurate with qualifications
- Relocation Assistance

What We're Seeking:

- Completion of an accredited training program
- Ability to acquire license in the State of Pennsylvania
- Must be able to obtain valid federal and state narcotics certificates.
- Current American Heart Association BLS and ACLS certification required.
- BE/BC in Family Medicine or Internal Medicine (position dependent)

No J1 visa waiver sponsorships available

What the Area Offers:

Penn State Health is located in Central Pennsylvania. Our local neighborhoods boast a reasonable cost of living whether you prefer a more suburban setting or thriving city rich in theater, arts, and culture. Our surrounding communities are rich in history and offer an abundant range of outdoor activities, arts, and diverse experiences. **We're conveniently located within a short distance to major cities such as Philadelphia, Pittsburgh, NYC, Baltimore, and Washington DC.**

For more information please contact:
Heather J. Peffley, PHR FASPR, Penn State Health Physician Recruiter
hpeffley@pennstatehealth.psu.edu

PennState Health

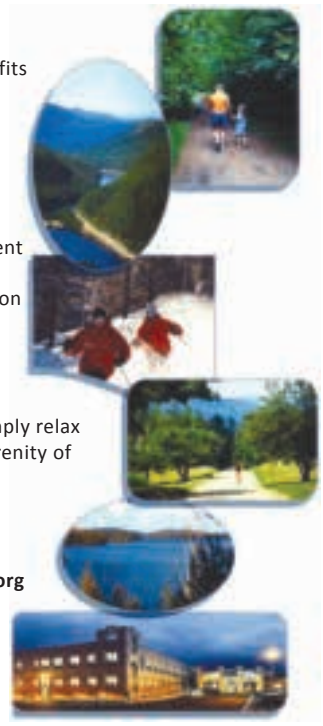
Penn State Health is committed to affirmative action, equal opportunity and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/Disabled.

Employment Opportunity in the Beautiful Adirondack Mountains of Northern New York

Current Opening for a full-time, Hospital Employed Hospitalist. This opportunity provides a comfortable 7 on/7 off schedule, allowing ample time to enjoy all that the Adirondacks have to offer!

Come live where others vacation!

- Convenient schedules
- Competitive salary & benefits
- Unparalleled quality of life
- Family friendly community
- Excellent schools
- Nearby Whiteface Mountain ski resort
- Home of the 1932 & 1980 Winter Olympics and current Olympic Training Center
- Annual Ironman Competition
- World Cup Bobsled and Ski Events
- Abundant arts community



Hike, fish, ski, golf, boat or simply relax and take in the beauty and serenity of the Adirondack Mountains

Contact: Joanne Johnson
518-897-2706
jjohnson@adirondackhealth.org
www.adirondackhealth.org

ADIRONDACK HEALTH

Where Quality of Life and Quality of Care Come Together

Hospitalist Opportunities Available The Berkshires ~ Western Massachusetts

Berkshire Health Systems is currently seeking BC/BE Internal Medicine & Med/Peds physicians to join our comprehensive Hospitalist Department

- Day, Evening and Nocturnist positions
- 7 on/7 off 10 hour shift schedule
- Previous Hospitalist experience is preferred

Located in Western Massachusetts Berkshire Medical Center is the region's leading provider of comprehensive health care services

- 302-bed community teaching hospital
- A major teaching affiliate of the University of Massachusetts Medical School
- The latest technology including a system-wide electronic health record
- A closed ICU/CCU
- A full spectrum of Specialties to support the team.

We understand the importance of balancing work with a healthy personal lifestyle

- Located just 2½ hours from Boston and New York City
- Small town New England charm
- Excellent public and private schools
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Berkshire Health Systems offers a competitive salary and benefits package, including relocation.

Interested candidates are invited to contact:
Liz Mahan • (413) 395-7866
Emahan@bhs1.org
Apply online at: **www.berkshirehealthsystems.org**

Berkshire Health Systems

THE Hospitalist

To advertise in The Hospitalist or the Journal of Hospital Medicine

CONTACT:
Heather Gonroski
973.290.8259
hgonroski@mdedge.com
or
Linda Wilson
973.290.8243
lwilson@mdedge.com

DIVISION CHIEF, HOSPITALIST MEDICINE

DEPARTMENT OF MEDICINE

Hershey, Pennsylvania

Penn State Health Milton S. Hershey Medical Center invites applications and nominations for the position of Division Chief, Hospitalist Medicine. The successful candidate will be a nationally recognized academic leader with a substantial record of leadership, clinical and administrative accomplishments, education scholarship and/or research productivity and teaching experience. We seek candidates with prior administrative and leadership experience gained within a Department of Medicine, strong interpersonal and communication skills and demonstrated ability to effectively inspire, manage, mentor, and develop faculty and staff. Candidates must hold the degree of MD, DO, or equivalent, or MD/PhD, be board certified in internal medicine, and possess qualifications for appointment.

The Division of Hospital Medicine at Penn State Health is made up of five teaching teams, five attending teams, two nocturnists, one consult team and one triage team. Together they provide inpatient care to 140+ hospitalized patients per day. The discipline of hospital medicine grew out of the increasing complexity of patients requiring hospital care and the need for dedicated clinicians to oversee their care. There are plans to further expand the number of providers, presenting a tremendous opportunity for a visionary leader to establish a national presence.

PennState Health
Milton S. Hershey Medical Center

INQUIRIES, NOMINATIONS AND EXPRESSIONS OF INTEREST, INCLUDING A CURRICULUM VITAE AND COVER LETTER, SHOULD BE SUBMITTED CONFIDENTIALLY VIA EMAIL TO

Heather Peffley, PHR FASPR: hpeffley@pennstatehealth.psu.edu.

Penn State Health is committed to affirmative action, equal opportunity and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/Disabled.

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HOSPITALIST
FULL TIME
NASSAU COUNTY, LONG ISLAND
NASSAU UNIVERSITY MEDICAL CENTER

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NUMC is looking for an Internal Medicine Hospitalist to join our team. Board certification in Internal Medicine required.

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WWW.NUMC.EDU AN EOE M/F/D/V

CHA Cambridge Health Alliance

Hospitalist/Nocturnist
Cambridge Health Alliance (CHA)

Cambridge Health Alliance (CHA), a well-respected, nationally recognized and award-winning public healthcare system, is recruiting for part time and full time hospitalists and nocturnists. CHA is a teaching affiliate of both Harvard Medical School (HMS) and Tufts University School of Medicine. Our system is comprised of three campuses and an integrated network of both primary and specialty outpatient care practices in Cambridge, Somerville and Boston's Metro North Region.

- Full time and part time opportunities available
- Schedule will consist of daytime and nighttime shifts, nocturnist positions are available
- Academic Appointment at Harvard Medical School
- Opportunity to teach medical students and residents
- Two coverage locations approximately 5 miles apart
- Physician assistant support at both locations
- CHA's hospitalist department consists of 25+ clinicians

Ideal candidates will be Board Certified, patient centered and demonstrate a strong commitment to work with a multicultural, underserved patient population. Experience and interest in performing procedures and community ICU coverage preferred. At CHA we offer a supportive and collegial environment, a strong infrastructure, a fully integrated electronic medical record system (EPIC) and competitive salary/benefits package.

Please visit **www.CHAproviders.org** to learn more and apply through our secure candidate portal. CVs may be sent directly to Kasie Marchini at **ProviderRecruitment@challiance.org**. CHA's Department of Provider Recruitment may be reached by phone at (617) 665-3555 or by fax at (617) 665-3553.

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

HOSPITALISTS/ NOCTURNISTS
NEEDED IN SOUTHEAST LOUISIANA

Ochsner Health System is seeking physicians to join our hospitalist team. BC/BE Internal Medicine and Family Medicine physicians are welcomed to apply. Highlights of our opportunities are:

- Hospital Medicine was established at Ochsner in 1992. We have a stable 50+ member group
- 7 on 7 off block schedule with flexibility
- Dedicated nocturnists cover nights
- Base plus up to 40K in incentives
- Average census of 14-18 patients
- E-ICU intensivist support with open ICUs at the community hospitals
- EPIC medical record system with remote access capabilities
- Dedicated RN and Social Work Clinical Care Coordinators
- Community based academic appointment
- The only Louisiana Hospital recognized by US News and World Report Distinguished Hospital for Clinical Excellence award in 3 medical specialties
- Co-hosts of the annual Southern Hospital Medicine Conference
- We are a medical school in partnership with the University of Queensland providing clinical training to third and fourth year students
- Leadership support focused on professional development, quality improvement, and academic committees & projects
- Opportunities for leadership development, research, resident and medical student teaching
- Skilled nursing and long term acute care facilities seeking hospitalists and mid-levels with an interest in geriatrics
- Paid malpractice coverage and a favorable malpractice environment in Louisiana
- Generous compensation and benefits package

Ochsner Health System is Louisiana's largest non-profit, academic, healthcare system. Driven by a mission to **Serve, Heal, Lead, Educate and Innovate,** coordinated clinical and hospital patient care is provided across the region by Ochsner's 40 owned, managed and affiliated hospitals and more than 100 health centers and urgent care centers. Ochsner is the only Louisiana hospital recognized by U.S. News & World Report as a "Best Hospital" across three specialty categories caring for patients from all 50 states and more than 70 countries worldwide each year. Ochsner employs more than 25,000 employees and over 4,500 employed and affiliated physicians in over 90 medical specialties and subspecialties, and conducts more than 700 clinical research studies. For more information, please visit **ochsner.org** and follow us on Twitter and Facebook.

Interested physicians should click here to apply online.

Visit ochsner.org/physician Job Number 00022186

Ochsner Health System

Sorry, no opportunities for J1 applications.

Ochsner is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, protected veteran status, or disability status.

To learn more, visit www.the-hospitalist.org and click "Advertise" or contact
Heather Gonroski • 973-290-8259 • hgonroski@mdedge.com or
Linda Wilson • 973-290-8243 • lwilson@mdedge.com

Documentation matters

Quality over quantity

By Erica Remer, MD, FACEP

Documentation has always been part of a physician's job. Historically, in the days of paper records, physicians saw a patient on rounds and, immediately following, while still on the unit, wrote a daily note detailing the events, test results, and plans since the last note. Addenda were written over the course of the day and night as needed.

The medical record was a chronological itemization of the encounter. The chart told the patient's story, hopefully legibly and without excessive rehashing of previous material. The discharge summary then encapsulated the hospitalization in several coherent paragraphs.

In the current electronic records environment, we are inundated with excessive and repetitious information, data without interpretation, differentials without diagnoses. Prepopulation of templated notes, defaults without edit, and dictation without revision have degraded our documentation to the point of unintelligibility. The chronological storytelling and trustworthiness of the medical record has become suspect.

The Centers for Medicare & Medicaid Services is touting its "Patients over Paperwork" initiative. The solution is flawed (that is, future relaxation of documentation requirements for professional billing) because the premise is delusive. Documentation isn't fundamentally the problem. Clinicians having to jump through regulatory hoops which do not advance patients' care and providers misunderstanding the requirements for level-of-service billing are the essential issues. Getting no training on how to properly document in medical school/residency and receiving no formative feedback on documentation throughout one's career compound the problem. Having clinical documentation serve too many masters, including compliance, quality, medicolegal, utilization review, and reimbursement, is also to blame. The advent of the electronic medical record was just the straw that broke the camel's back.

Many hospitals now have a clinical documentation integrity (CDI) team which is tasked with querying the provider when the health record documentation is conflicting, imprecise, incomplete, illegible, ambiguous, or inconsistent. They are charged with getting practitioners to associate clinical indicators with diagnoses and to consider removal of diagnoses which do not seem clinically valid from the existing documentation. From this explanation, you might well conclude that the CDI specialist could generate a query on every patient if they were so inclined, and you would be correct. But the goal isn't to torture the physician – it is to ensure that the medical record is accurately depicting the encounter.

You are not being asked for more documentation by the CDI team; they are entreating you for higher-quality documentation. Let me give you some pointers to ward off queries.

- **Tell the story.** The most important goal of documentation is to clinically communicate to other caregivers. Think to yourself: "What would a fellow clinician need to know about this patient to understand why I drew those conclusions or to pick up where I left off?" At 2 a.m., that information, or lack thereof, could literally be a matter of life or death.
- **Tell the truth.** Embellishing the record or including invalid diagnoses with the intent to increase the severity of illness resulting in a more favorable diagnosis-related group – the inpatient risk-adjustment system – is considered fraud.
- Consider doing a **documentation time-out.** You may like the convenience of copy forward, but do you relish reading other people's copy and paste? Before you copy and paste yesterday's assessment and plan, stop and think: "Why is the patient still here? Why are we doing what we are doing?" If you choose to copy and paste, be certain to do mindful editing so the documentation represents the current situation and avoids redundancy.
- **Translate findings into diagnoses using your best medical judgment.** One man's hypotension may be another health care provider's shock. Coders are not clinical and are not permitted to make inferences. A potassium of 6.7 may be hyperkalemia or it may be spurious – only a clinician may make that determination using their clinical expertise and experience. The coder is not allowed to read your mind. You must explicitly draw the conclusion that a febrile patient with bacteremia, encephalopathy, hypoxemia, and a blood pressure of 85/60 is in septic shock.
- Code uncertain diagnoses (heralded by words such as: likely, possible, probable, suspected, rule out, etc.) which are not ruled out prior to discharge or demise as if they were definitively present, for the inpatient technical side of hospital billing. This is distinctly different than the professional fee where you can code only definitive diagnoses. If you have a strong suspicion that a condition is present, **best practice is to offer an uncertain diagnosis**. Associate signs and symptoms with your most likely diagnosis: "Shortness of breath, pleuritic chest pain, and hypoxemia in the setting of cancer, probable pulmonary embolism."
- **Evolve, resolve, remove, and recap.** If an uncertain diagnosis is ruled in, take away the uncertainty. If it is ruled out, don't have 4 days of copy and pasted: "Possible eosinophilic pneumonia." You do not have to maintain a resolved diagnosis ad infinitum. It can drop off the diagnosis list but be sure to have it reappear in the discharge summary.
- Realize it can be a **hASSLe** to do excellent documentation, but it is critical for many reasons, most importantly for superlative patient care. More accurate coding and billing is an intended consequence. (A: Acuity; S: Severity; S: Specificity – may affect the coding and the risk-adjustment implications. Acute systolic heart failure does not equal heart failure; type 2 diabetes mellitus with diabetic chronic kidney disease, stage 4 does not equal chronic kidney disease; and L: Linkage – of diagnosis with underlying cause or manifestation [e.g., because of, associated with, as a result of, secondary to, or from diabetic nephropathy, hypertensive encephalopathy]).
- If you have the capability to **keep a running summary** throughout the hospital stay, do so and keep it updated. A few moments of daily careful editing and composing can save time and effort at the back end creating the discharge summary.
- **Read your documentation over.** Ensure that it is clear, accurate, concise, and tells the story and the plans for the patient.
- **Set up a program to self-audit documentation** where monthly or quarterly, you and your partners mutually review a certain number of records and give each other feedback. Design an assessment tool which rates the quality of documentation elements which your hospital/network/service line values (clarity, copy and paste, complete and specific diagnoses, etc.).
- Finally, answer CDI queries. The CDI specialist is your ally, not your enemy. They are not permitted to lead the provider, so don't ask them what they want you to write. But, if you don't understand the query or issue, have a conversation and get it clarified.

Documentation improves patient care and demonstrates that you provided excellent patient care. Put mentation back into documentation.

Dr. Remer was a practicing emergency physician for 25 years and a physician advisor for 4 years. She is on the board of directors of the American College of Physician Advisors and the advisory board of the Association of Clinical Documentation Improvement Specialists. She currently provides consulting services for provider education on documentation, CDI, and ICD-10 coding. Dr. Remer can be reached at eremer@icd10md.com

Transitional care offers no overall benefit

But women respond more to intervention

By Richard Mark Kirkner
MDedge News

PHILADELPHIA – A clinical trial of a program that transitions heart failure patients after they're discharged from the hospital didn't result in any appreciable improvement in all-cause death, readmissions, or emergency department visits after 6 months overall, but it did show that women responded more favorably than men.

Harriette G.C. Van Spall, MD, MPH, reported 6-month results of the Patient-Centered Transitional Care Services in Heart Failure (PACT-HF) trial of 2,494 HF patients at 10 hospitals in Ontario during February 2015 to March 2016. They were randomized to the care-transition program or usual care. The findings, she said at the American Heart Association scientific sessions, "highlight the gap between efficacy that's often demonstrated in mechanistic clinical trials and effectiveness when we aim to implement these results in real-world settings." Three-month PACT-HF results were reported previously (JAMA. 2019 Feb 26;321:753-61).


Dr. Van Spall

The transitional-care model consisted of a comprehensive needs assessment by a nurse who also provided self-care education, a patient-centered discharge summary, and follow-up with a family physician within 7 days of discharge, which Dr. Van Spall noted "is not current practice in our health care system."

Patients deemed high risk for readmission or death also received nurse home visits and scheduled visits to a multidisciplinary heart function clinic in 2-4 weeks of discharge and continuing as long as clinically suitable, said Dr. Van Spall, a principal investigator at the Population Health Research Institute, Hamilton, Ont., and assistant professor in cardiology at McMaster University in Hamilton.

The trial found no difference between the intervention and usual-care groups in the two composite endpoints at 6 months, Dr. Van Spall said: all-cause death, readmissions, or ED visits (63.1% and 64.5%, respectively; *P* = .50); or all-cause readmissions or ED visits (60.8% and 62.4%; *P* = .36).

"Despite the mutual overall clinical outcomes, we noted specific differences in response to treatment," she said. With regard to the composite endpoint that included all-cause death, "Men had an attenuated response to the treatment with a hazard ratio of 1.05 (95% confidence interval, 0.87-1.26), whereas women had a hazard ratio of 0.85 (95% CI, 0.71-1.03), demonstrating that women have more of a treatment response to this health care service," she said.

In men, rates for the first primary composite outcome were 66.3% and 64.1% in the intervention and usual-care groups, whereas in women those rates were 59.9% and 64.8% (*P* = .04 for sex interaction).

In the second composite endpoint, all-cause readmission or ED visit, "again, men had an attenuated response" with a HR of 1.03, whereas women had a HR of 0.83. Results were similar to those for the first primary composite outcome: 63.4% and 61.7% for intervention and usual care in men and 57.7% and 63% in women (*P* = .03 for sex interaction).

In putting the findings into context, Dr. Van Spall said tailoring services to risk in HF patients may be fraught with pitfalls. "We delivered intensive services to those patients at high risk of readmission or death, but it is quite possible they are the least likely to derive benefit by virtue of their advanced heart failure," she said. "It may be that more benefit would have been derived had we chosen low- or moderate-risk patients to receive the intervention."

She also said the sex-specific outcomes must be interpreted with caution. "But they do give us pause to consider that services could be titrated more effectively if delivered to patients who are more likely to derive benefit," Dr. Van Spall said. The finding that women derived more of a benefit is in line with other prospective and observational studies that have found that women have a higher sense of self-care, self-efficacy, and confidence in managing their own health care needs than men.

Dr. Van Spall has no financial relationships to disclose.

The Hospitalist