

JHM Twitter chat sparks connections

Monthly social media event links editors, authors, and readers

By Larry Beresford

Once upon a time, physicians wrote letters to peers and colleagues around the world, sharing their medical discoveries, theories, case reports, and questions; conferring on problems; and then waiting for return mail to bring a reply. And the science of medicine advanced at a glacial pace.

Today, communication in multiple mediums flows much faster, almost instantaneously, among many more physicians, regardless of distance, addressing a much greater complexity of medical topics and treatments. And one of the chief mediums for this rapid electronic conversation among doctors is Twitter, according to Charlie Wray, DO, MS, FHM, a hospitalist and assistant clinical professor of medicine at the University of California, San Francisco.

Dr. Wray, associate editor and digital media editor for the Journal of Hospital Medicine, is one of the moderators of #JHMchat, a monthly get-together on Twitter for interested hospitalists to link up virtually; respond to questions posed by JHM editors and other moderators; exchange perspectives, experiences, and tips with their peers; and build professional relationships and personal friendships. Relationship building has become particularly important in the age of COVID-19, when opportunities to connect in person at events such as SHM's annual con-

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Dr. Charlie Wray, hospitalist at the San Francisco VA Health Care System and the University of California, San Francisco.

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Resources for hospitalists

SHM is committed to supporting hospitalists and the health care team to safely deliver patient care while maintaining the health and well-being of the families and the community they serve. SHM has developed resources for hospitalists as well as compiled a listing of existing resources which you can find on our website. The resources include:

Hospital Medicine COVID-19 Check-In Guide for Self & Peers
This is the first resource produced by SHM's Well-being Taskforce to address the issues of hospitalist



GREENAPICTURE/GETTY IMAGES

SHM has developed resources for hospitalists as well as compiled a listing of existing resources which you can find on our website.

burnout and mental health during COVID-19. It is designed to help hospitalists to break the culture of silence around well-being, burnout, and mental health during COVID-19 by encouraging open conversation around how they are handling and processing the pandemic. Download the guide at <https://bit.ly/3nxikzl>.

SHM's Strategies for Hospitalist Well-being Initiatives During COVID-19

This resource was developed based on information shared during an April 2020 webinar on Provider Well-being. Included are examples of initiatives currently being implemented by various hospital

medicine groups. You can find this resource at <https://bit.ly/3seNBKQ>.

Webinars

Hear experiences and examples of how hospitalists and hospital medicine groups are managing their response to the clinical and practice implications of COVID-19. Webinars have included topics related to hospitalist well-being. For instance, a recent webinar featured Gail Gazelle, MD, MCC, a physician coach, author, and mentor focused on burnout and resilience. This was a virtual, confidential session created for hospitalists to have a space for honest reflection, support, and the exploration of strategies for navigating the stress and challenges of being on the front lines of the COVID-19 response and in caring for themselves and their families during a pandemic. See upcoming and recorded SHM webinars on the website: www.hospitalmedicine.org/clinical-topics/coronavirus-disease-2019-covid-19-resources-for-hospitalists/webinars.

Other resources not provided directly by SHM include:

Physician Support Line: Volunteer psychiatrist-staffed helpline for free and confidential peer support to discuss immediate life stressors. Available 7 days a week, 8:00 am–12:00 am EST. Contact number: 888-409-0141

Talkspace: Virtual therapy tool offering a free month of Unlimited Messaging Plus for health care providers by registering using their NPI. Download app in App Store or Google Play.

National Suicide Prevention Lifeline: Free and confidential crisis hotline for anyone available 24/7 across the United States. Contact number: 800-273-8255.

Headspace Meditation App: App-based meditation tool. Premium version (Headspace Plus) available free for health care providers through 2020 by registering using their National Provider Identifier (NPI). Download app in App Store or Google Play.

Tide: A free app that uses natural sounds to help you sleep, relax, focus, and meditate. Tide also listens to your breathing to play an alarm during your lightest sleep phase, waking you up as gently as possible. Their premium service is available to all health care workers. Download app in App Store or Google Play.

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Key trends in hospitalist compensation

Revealing data from the 2020 SoHM Report

**By Linda M. Kurian, MD,
SFHM, FACP**

In a time of tremendous uncertainty, there is one trend that seems consistent year over year – the undisputed value of hospitalists. In the 2020 *State of Hospital Medicine (SoHM)* Report, the Society of Hospital Medicine partnered with the Medical Group Management Association (MGMA) to provide data on hospitalist compensation and productivity. The Report provides resounding evidence that hospitalists continue to be compensated at rising rates. This may be driven by both the continued demand-supply mismatch and a recognition of the overall value they generate rather than strictly the volume of their productivity.

In 2020, the median total compensation nationally for adult hospitalists (internal medicine and family medicine) was \$307,633, representing an increase of over 6% from the 2018 Survey (see Figure 1).

With significant regional variability in compensation across the country, hospitalists in the South continue to earn more than their

colleagues in the East – a median compensation difference of about \$33,000. However, absolute wage comparisons can be misleading without also considering regional variations in productivity as well.



Reviewing compensation per work relative value unit (wRVU) and per encounter offers additional insight for a more comprehensive assessment. In comparison of regional compensation per wRVU, the 2020 report continues to show a trend toward hospitalists in the Midwest and West earning more per wRVU than their colleagues in other parts of the country (\$78.13 per RVU in the Midwest, \$78.95 per RVU in the West). More striking is how hospital medicine groups (HMGs) in the South garner lower compensation per RVU (\$57.77) than those in the East (\$67.54), even though their total compensation was much higher. This could reflect the gradual decline in compensation

per wRVU that's observed at higher productivity levels. While it's typical for compensation to increase as productivity does, the rate of increase is generally to a lesser degree.

Like past SoHM Surveys, the 2020 report revealed that academic and nonacademic hospitalists are compensated similarly per wRVU (see Figure 2). However, the total compensation continues to be lower for academic hospitalists, with a median compensation difference of approximately \$70,000 compared to their nonacademic colleagues. Some of this variance is offset by the fact that academic HMGs receive more in employee benefits packages than nonacademic groups – a difference in median value of \$10,500. Ideally, academic hospitalist compensation models should reflect and value their work efforts toward the tripartite academic mission of clinical care, education, and research. It would be valuable for future surveys to define and measure academic production in order to develop national standards for compensation models that recognize these nonbillable forms of productivity.

While it's important to review compensation benchmarks to remain competitive, it's difficult to put a price on some factors that many may consider more valuable – group culture, opportunities for professional growth, and schedules that afford better work-life integration. Indirect measures of such benefits include paid time off, paid sick days, CME allowances and time, and retirement benefits programs. In 2020, the median employer contribution to retirement plans was reported to be \$13,955, with respondents in the Midwest receiving the highest retirement benefit of \$33,771.

It's encouraging to see that hospitalist compensation continues to rise compared to previous years, de-

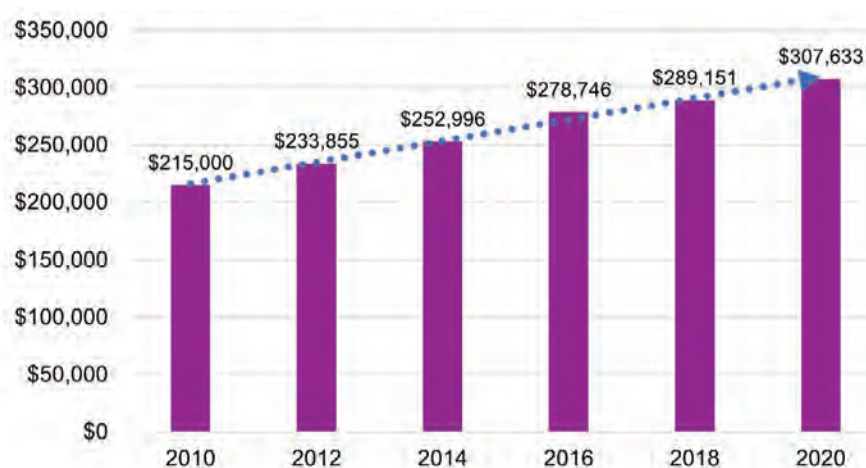


Dr. Kurian is chief of the Division of Hospital Medicine at Northwell Health in New York. She is a member of SHM's Practice Analysis Committee.

spite relatively flat trends in wRVUs and total patient encounters. Another continued trend over the past years is the rising amount of financial support per physician that hospitals or other organizations provide HMGs (see Figure 3). In 2020, the median financial support per FTE (full time equivalent) physician serving adult patients increased by 12% over 2018, to \$198,750. Collectively these trends indicate hospitals are willing to compensate hospitalists for more than just their clinical volume.

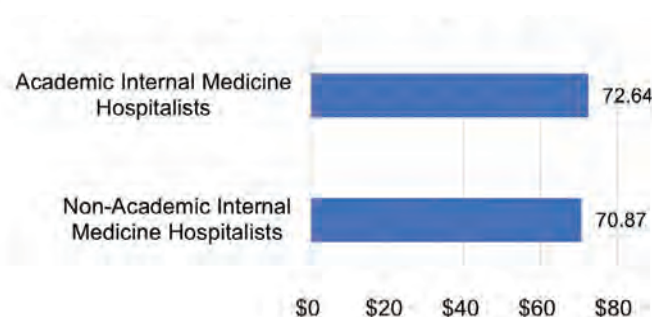
There's no doubt that the COVID-19 pandemic had some financial impact on hospital medicine groups in 2020. To assess this impact, SHM conducted a follow-up survey and compiled a COVID-19 Addendum to the SoHM Report. While 20.5% of HMG group respondents from the East reported providing hazard pay to clinicians caring for COVID-19 patients, nationally only 9.8% of groups said they offered this benefit. Of the 121 HMGs responding from across the country, 42% reported reductions in compensation, which included measures such as reductions in pay level and elimination or delays to bonus payments. The degree of reductions was not quantified, but fortunately the vast majority of these groups reported that these changes were likely to be temporary. To access all data in the 2020 SoHM Report and COVID-19 Addendum, visit hospitalmedicine.org/sohm to purchase your copy.

Figure 1. Trends in Hospitalist Physician Compensation



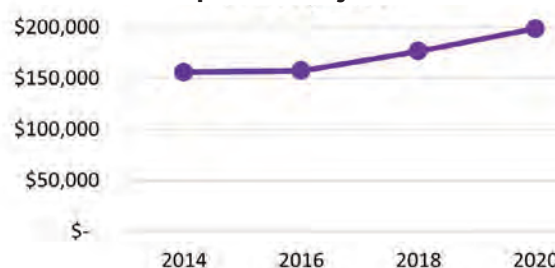
Source: 2020 State of Hospital Medicine Report

Figure 2. Average Compensation per wRVU



Source: 2020 State of Hospital Medicine Report

Figure 3. Amount of Financial Support per FTE Physician



Source: 2020 State of Hospital Medicine Report

Back in session

The impact of school reopenings on hospitalist parents

By Sarah Ludwig Rausch

Before the pandemic, the biggest parent-related challenge for Charlie Wray, DO, MS, FHM, a hospitalist and assistant clinical professor of medicine at the University of California, San Francisco, was “figuring out what I was going to pack in my kids’ lunches. Like most people, we were very much in our groove – we knew when my wife was going to leave work, and which day I’d pick up the kids,” Dr. Wray said. “I reflect back on that and think how easy it was.”

The old life – the one that seems so comparatively effortless – has been gone for close to a year now. And with the reopening of schools in the fall of 2020, hospitalists with school-age kids felt – and are still feeling – the strain in a variety of ways.

‘Podding up’

“The largest struggles that we have had involve dealing with the daily logistics of doing at-home learning,” said Dr. Wray, father to a 6-year-old and a 3-year-old. Dr. Wray and his wife are both physicians and have been juggling full work schedules with virtual school for their older child, who is not old enough to be autonomous. “For parents who have younger children who require one-on-one attention for the vast majority of their learning, that certainly takes more of a toll on your time, energy, and resources.”

Uncertainty has created anxiety about the future. “We have no idea what’s going to be happening next month. How do we plan for that? How do we allocate our time for that? That has been a real struggle for us, especially for a two-physician household where we are both considered front line and are both needing to be at the hospital or the clinic on a fairly regular basis,” he said.

Then there is the never-ending stress. Dr. Wray observed that physicians are used to operating under stress, especially at work. “What I think is gnawing at me, and probably a lot of other physicians out there, is you go home and that stress is still there. It’s really hard to escape it. And you wake up in the morning and it’s there, whereas in the past, you could have a nice day. There’s little separation between work and domestic life right now.”

Having to work later into the evening has eaten into time for himself and time with his wife too. “That’s another side effect of the pandemic – it not only takes your time during the day, it takes the time you used to have at night to relax.”

To manage these challenges, Dr. Wray said he and his wife regularly double-check their schedules. The family has also created a pod – “I think ‘podded up’ is a verb now,” he laughed – with another family and hired a recent college graduate to help the kids with their virtual learning. “Is it as good as being at school and amongst friends and having an actual teacher there? Of course

not. But I think it’s the best that we can do.”

Dr. Wray said his employers have been flexible and understanding regarding scheduling conflicts that parents can have. “It’s really difficult for us, so oftentimes I struggle to see how other people are pulling this off. We recognize how fortunate we are, so that’s something I never want to overlook.”

Dividing and conquering

The biggest prepandemic issue for Sridevi Alla, MD, a hospitalist at Baptist Memorial Health in Jackson, Miss., and mother to four children – a

“For parents who have younger children who require one-on-one attention for the vast majority of their learning, that certainly takes more of a toll on your time, energy, and resources.”

10-year-old, 6-year-old, 2-year-old, and a 9-month-old – was finding a babysitter on the weekend to take her kids out somewhere to burn off energy.

That’s a noticeable departure from the current demand to be not just a parent, but a teacher and a counselor too, thanks to virtual school, noted Dr. Alla. “You are their everything now,” she said. “They don’t have friends. They don’t have any other atmosphere or learning environment to let out their energy, their emotions. You have become their world.”

The beginning of the pandemic was particularly stressful for Dr. Alla, who is in the United States on an H-1B visa. “It was totally worrisome because you’re putting yourself at risk with patients who have

the coronavirus, despite not knowing what your future itself is going to be like or what your family’s future is going to be like if anything happens to you,” she said. “We are fortunate we have our jobs. A lot of my immigrant friends lost theirs in the middle of this and they’re still trying to find jobs.”

Dr. Alla’s first challenge was whether to send her older two children to school or keep them at home to do virtual learning. The lack of information from the schools at first did not help that process, but she and her husband ended up choosing virtual school, a decision they still occasionally question.

Next, they had to find child care, and not just someone who could look after the younger two kids – they needed someone with the ability to also help the older ones with their homework.

Though initially the family had help, their first nanny had to quit because her roommate contracted COVID. “After that, we didn’t have help and my husband decided to work from home,”

said Dr. Alla. “As of now, we’re still looking for child care. And the main issues are the late hours and the hospitalist week-on, week-off schedule.”

“It’s extremely hard,” she reflected. “At home, there’s no line. A 2-year-old doesn’t understand office time or personal time.” Still, Dr. Alla and her husband are maintaining by dividing up responsibilities and making sure they are always planning ahead.

Maintaining a routine

The greatest challenge for Heather Nye, MD, PhD, a hospitalist and professor of clinical medicine at UCSF, has been “maintaining normalcy for the kids.” She mourns the loss of a normal childhood for her kids, however temporary. “Living with abandon, feeling like you’re invincible, going out there and breaking your arm, meeting people, not fearing the world – those are not things we can instill in them right now,” she said.

The mother of an eighth-grader and a second-grader, Dr. Nye said their school district did not communicate well about how school would proceed. The district ended up offering only virtual school, with no plans for even hybrid learning in the future, leaving parents scrambling to plan.

Dr. Nye lucked out when her youngest child was accepted for a slot at a day camp offered through a partnership between the YMCA and UCSF. However, her eighth-grader did not do well with distance learning in the spring, so having

“You’re putting yourself at risk with patients who have the coronavirus, despite not knowing what your future itself is going to be like or what your family’s future is going to be like if anything happens.”

that virtual school as the only option has been difficult.

“Neither of the kids are doing really well in school,” she said. Her older one is overwhelmed by all the disparate online platforms, and her youngest is having a hard time adjusting to differences like using a virtual pen. “The learning itself without question has suffered. You wonder about evaluation and this whole cohort of children in what will probably be more or less a lost year.”

Routines are the backbone of the family’s survival. “I think one of the most important things for kids in any stage of development is having a routine and being comfortable with that routine because that creates a sense of well-being in this time of uncertainty,” Dr. Nye said.

Neither Dr. Nye nor her husband, a geriatrician, have cut back on their work, so they are balancing a full plate of activities with parenting. Though their family is managing, “there are streaks of days where we’re like: ‘Are we failing



Dr. Wray



Dr. Alla



our children?' I'm sure every parent out there is asking themselves: 'Am I doing enough?' But she said, "We're very, very lucky. We got that [camp] slot; we have the money to pay for it, and we both have flexible jobs."

Rallying resources

Avital O'Glasser, MD, a hospitalist and associate professor of medicine at Oregon Health & Science University, Portland, fervently wished she could clone herself when the pandemic first started. Not only were her kids suddenly thrown into online classes, but she was pulled in to create a new service line for the COVID response at her clinic.

"The number of times that I said I think I need a time turner from Harry Potter ... I felt that nothing was getting done even close to adequately because we were cutting corners left and right," she said.

Thankfully, things have simmered down and Dr. O'Glasser is now working from home 5 or 6 days a week while her husband, a lawyer, goes to his job. "I think stress is lower now, but that's in large part because, by the end of June, I really had to just stop and acknowledge how stressed I was and do a dramatic realignment of what I was doing for myself in terms of mental health support and bandwidth," she said. Part of that involved realizing that the family needed a homeschool nanny for their 10-year-old and 7-year-old. "It's been a lifesaver," said Dr. O'Glasser.

Though life is on more of an even keel now, stress pops up in unexpected ways. "My youngest has pretty intense separation anxiety from me. Even with getting attention all day from our homeschool nanny, the day after I'm out of the house at the hospital, he really clings to me," Dr.

O'Glasser said. There's sibling rivalry too, in an attempt to get parental attention.

Setting boundaries between work and home was her biggest challenge prepandemic, and that has not changed. "You're trying to find that happy balance between professional development and family," Dr. O'Glasser said. "Where do I cut corners? Do I try to multitask but spread myself thin? How do I say no to things? When am I going

"We're going to have times when people are filling every last minute for their families. Face it with kindness and understanding and know that, in future years, things are going to go back to normal."

to find time to do laundry? When am I disconnecting? I think that now it's facets of the same conundrum, but just manifested in different ways."

She emphasized that parents should go easy on themselves right now. "A lot of parenting rules

"I would encourage groups to reach appropriate accommodations that are equitable and that don't create discord because they're perceived as unfair."

went out the window. My kids have had more screen time ... and the amount of junk food they eat right now? Celebrate the wins." Dr. O'Glasser chuckled about how her definition of a "win" has changed. "The bar now is something that I may never have considered a win before. Just seize those small moments. If my 7-year-old needs to do reading at my feet while I'm finishing notes from the day before, that's okay," she said.

Getting help from hospitalist groups

All four hospitalists had ideas about how hospitalist groups can help parents with school-age kids during the pandemic.

Providing child care at health care systems gives employees additional support, said Dr. Alla. Some of her friends have been unable to find child care because they are physicians who care for COVID patients and people do not want the extra risk. "I think any institution should think about this option because it's very beneficial for an employee, especially for the long hours."

Dr. Wray said he saw a program that matches up a hospitalist who has kids with one who does not in a type of buddy system, and they check in with each other. Then, if the parent has something come up, the other hospitalist can fill in and the parent can "pay it back" at another time. "This doesn't put all the impetus on the schedule or on a single individual but spreads the risk out a little more and gives parents a bit of a parachute to make them feel like the system is supporting them," he said.

"I would encourage groups to reach appropriate accommodations that are equitable and that don't create discord because they're perceived as unfair," said Dr. O'Glasser. For instance, giving child care stipends, but limiting them to care at a licensed facility when some people might need to pay for a homeschool tutor. "Some of the policies that I saw seem to leave out the elementary school lot. You can't just lump all kids together."

Dr. Nye thought group leaders should take unseen pressures into account when evaluating employee performance. "I think we're going to need to shift our yardstick because we can't do everything now," she said. "I'm talking about the extra things that people do that they're evaluated on at the end of the year like volunteering for more shifts, sitting on committees, the things that likely aren't in their job description. We're going to have times when people are filling every last minute for their families. Face it with kindness and understanding and know that, in future years, things are going to go back to normal."



Dr. Nye



Dr. O'Glasser

Victorious endurance

To pass the breaking point and not break

By Leslie Flores, MHA, SFHM

I've been thinking a lot about endurance recently.

COVID-19 is surging in the United States. Health care workers exhausted from the first and second waves are quickly reaching the verge of collapse. I'm seeing more and more heartbreaking articles about the bone-deep fatigue, fear, and frustration health care workers are facing, and I weep. As horrible as it is to be fighting this terrifying, little-understood, invisible virus, health care workers are also fighting an equally distressing war against misinformation, recklessness, apathy, and outright denial.

As if that wasn't enough, we are also dealing with racial and social unrest not seen in decades. The most significant cultural divisions and political animosity perhaps since the Civil War. A contested election. The fraying of our democratic institutions and our standing in the global community. The weakest economy since the Great Depression. Record unemployment. Many individuals and families facing or already experiencing eviction and food insecurity. Record-setting fires, hurricanes, and other natural disasters that are projected only to intensify because of climate change.

That's a lot to endure. And we don't have much choice other than to live through it. Some of us will break under the strain; others will disengage by giving up clinical work or even leaving health care altogether. Some of us will pack it in and retire, walk away from relationships with family members or longtime friends, or even emigrate to another country (New Zealand, anyone?). Some of us will passively hunker down, letting the challenges of this time overwhelm us and just hoping we can hang on long enough to emerge, albeit beaten and scarred, on the other side.

But some of us will experience victorious endurance – the kind that doesn't just accept suffering but finds a way to triumph over it. I came across the concept of victorious endurance in the Bible, but its origin is earlier, from classical Greece. It comes from the ancient Greek word *hupomone*, which literally means “abiding under” – as in disciplining oneself to bear up under a trial when one would more

naturally rebel, or just give up. The ancient Greeks were big on virtues like self-control, long-suffering, and perseverance in the face of seemingly insurmountable difficulties; Odysseus was a poster child for *hupomone*. I believe the concept of victorious endurance can be applicable for people across many belief systems, philosophies, and ways of life.

The late William Barclay, former professor of divinity and biblical criticism at the University of Glasgow, said of *hupomone*:

It is untranslatable. It does not describe the frame of mind which can sit down with folded hands and bowed head and let a torrent of troubles sweep over it in passive resignation. It describes the ability

“When you look back on this time from the perspective of 5 years from now, or maybe 10, how will you want to remember yourself?”

to bear things in such a triumphant way that it transfigures them. ... It is the courageous and triumphant ability to pass the breaking-point and not to break and always to greet the unseen with a cheer. It is the alchemy which transmutes tribulation into strength and glory.

Barclay further noted that “Cicero defines *patientia*, its Latin equivalent, as: ‘The voluntary and daily suffering of hard and difficult things, for the sake of honour and usefulness.’”

In the midst of the most challenging public health emergency of our lifetimes, I am seeing hospitalists – and nurses, respiratory therapists, and countless other health care workers – doing exactly this, every day. I'm so incredibly proud of you all, and thankful beyond words.

I doubt that victorious endurance comes naturally to any of us; it's something we work at, pursue, and nurture. What's the secret to cultivating victorious endurance in the midst of unimaginable stress? I'm pretty sure there's no specific formula. I don't mean to sound like a Pollyanna or to make light of the

tumult and turmoil of these times, but here are a few things that, based on my own experiences, may help cultivate this valuable virtue.

Be part of a support network.

In the midst of great stress, and especially during this time of social distancing, it's especially tempting to just hunker down, close in on ourselves, and shut others out – sometimes even our closest friends and loved ones. Maintaining relationships is just too exhausting. But you need people who can come alongside you and offer words of encouragement when you are at your lowest. And there's nothing that will bring out the best in you like being there to encourage and support someone else. We all need to both receive and to give emotional support at a time like this.

Take the long view. When we're in the middle of a serious crisis, it seems like the problems we're facing will last forever. There's no light at the end of the tunnel. But even this pandemic won't last forever. If we can keep in mind the fact that things will eventually get better and that the current situation isn't permanent, it can help us maintain our perspective and have more patience with the current dysfunction.

Focus on who you want to be in this moment. This is the hardest time most of us have ever lived through, both professionally and personally. But let me throw you a challenge. When you look back on this time from the perspective of 5 years from now, or maybe 10, how will you want to remember yourself? Who will you want to have been during this time? Looking back, what will make you proud of how you handled this challenge? Be that person.

Look for things to be thankful for. In the midst of the chaos that is our lives and our work right now, I believe we can still occasionally see moments of grace if we keep our eyes open for them. If we aren't looking for them, we may miss them entirely. And those small moments of love, touches of compassion, displays of selflessness, and even flashes of victorious endurance in yourself or others are gifts to be treasured and held on to.

Embrace a cause greater than yourself. May I suggest that one thing that might help our efforts to cultivate the virtue of victorious endurance during difficult times



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might be to embrace a cause that is bigger than yourself; that is, one that lures you to focus beyond your immediate circumstances? What are you passionate about, outside of your life's normal routine?

If you don't have a passion, consider what you might become passionate about, with a little effort. For some of us, like me, this will be our faith in God. For others it may be advocating for an end to racism or for broader social justice issues.

Or perhaps what you embrace is even closer to home: maybe it's working to eliminate health disparities in your institution or health system, or figuring out how to use technology and resources differently to improve how care is being delivered during or after this pandemic. Maybe it's as simple as re-committing yourself to personally care for every patient you see today with the very best you have to offer, and with patience, compassion, and grace.

Find something that sets your heart on fire. Something that makes you want to take this difficult time and “transmute tribulation into strength and glory.” Something that, when you look back on these days, will make you thankful that you didn't just hunker down and subsist through them. Instead, you accomplished great things; you learned; you contributed; and you grew stronger and better.

Continued Care for COVID Recovery:

How LTAC Hospitals Help Post-COVID Patients

By **Sean R. Muldoon, MD, MPH, FCCP**,
Chief Medical Officer, Kindred Hospitals

The latest finds have identified specific care pathways that can be appropriate for the most severe cases of COVID-19. Specialized care in a long-term acute care hospital (LTACH) after the initial hospital stay is proving to play a critical role.

Unique Clinical Presentations Require Specialized Care

An important subset of COVID-19 patients have an extended hospital stay, accompanied by mechanical ventilation. As a result, these patients frequently experience significant pulmonary complications, including secondary bacterial pneumonia and acute respiratory distress-like syndrome. They are also at high risk of developing post-intensive care syndrome (PICS) due to receiving ICU interventions for much longer than the average stay of three to four days.

New research shows that specialized care interventions and rehabilitation are needed to address these short- and medium-term consequences.¹

New Research on Care Solutions for Post-COVID Patients: The Role of LTACHs

A recently co-authored post in *Health Affairs* highlighted the critical role that LTACHs can play during the COVID pandemic.² Specifically, the researchers suggest that the clinical expertise in LTACHs with “critical care nurses, respiratory therapists, and intensivists” aligns with the ongoing needs of COVID patients.

Additionally, *The Boston Globe*³ wrote that “COVID-19 has reminded the world of the importance of facilities that occupy the middle ground of the critical care landscape,” championing the importance of LTACHs in responding to COVID.

LTACHs deliver care to the most critically ill and medically complex patients – including those with respiratory failure, septicemia or other severe illnesses complicated by multiple chronic conditions. Many post-COVID patients experience one or many of these conditions.

The specialized, interdisciplinary clinician teams at LTACHs are also adept at liberating ventilator patients and providing pulmonary rehabilitation, both critical components of post-COVID recovery.



These specialty hospitals are unlike other post-acute care settings because they are licensed as a general acute care hospital by the state, accredited by The Joint Commission as acute care, and certified by the Centers for Medicare and Medicaid Services (CMS) as an LTACH.

Additionally, LTACHs feature hospital-level infection control, negative pressure rooms where needed and on-site laboratories, radiology and dialysis.

How Kindred Hospitals Can Help

At Kindred, our specialized clinicians treat post-intensive care and medically complex patients, including those who are post-COVID.

We have proven success in treating patients with pulmonary disease and respiratory failure, including a long history of liberating patients from mechanical ventilation and artificial airways.

If you have a post-COVID patient, or other patients in need of care after a hospital stay, please visit recoveratkindred.com or call **1.866.215.9857** to speak to a Registered Nurse.

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Kindred  Hospitals

Is COVID-19 accelerating progress toward high-value care?

By Rachna Rawal, MD;
Anne Linker, MD;
Christopher Moriates, MD

As Rachna Rawal, MD, was donning her personal protective equipment (PPE), a process that has become deeply ingrained into her muscle memory, a nurse approached her to ask, “Hey, for Mr. Smith, any chance we can time these labs to be done together with his medication administration? We’ve been in and out of that room a few times already.”

As someone who embraces high-value care, this simple suggestion surprised her. What an easy strategy to minimize room entry with full PPE, lab testing, and pa-

High-value care is providing the best care possible through efficient use of resources, achieving optimal results for each patient.

tient interruptions. That same day, someone else asked, “Do we need overnight vitals?”

COVID-19 has forced hospitalists to reconsider almost every aspect of care. It feels like every decision we make including things we do routinely – labs, vital signs, imaging – needs to be reassessed to determine the actual benefit to the patient balanced against concerns about staff safety, dwindling PPE supplies, and medication reserves. We are all faced with frequently answering the question, “How will this intervention help the patient?” This question lies at the heart of delivering high-value care.

High-value care is providing the best care possible through efficient use of resources, achieving optimal results for each patient. While high-value care has become a prominent focus over the past decade, COVID-19’s high transmissibility without a cure – and associated scarcity of health care resources – have sparked additional discussions on the front lines about promoting patient outcomes while avoiding waste. Clinicians may not have realized that these were high-

value care conversations.

The United States’ health care quality and cost crises, worsened in the face of the current pandemic, have been glaringly apparent for years. Our country is spending more money on health care than anywhere else in the world without desired improvements in patient outcomes. A 2019 JAMA study found that 25% of all health care spending, an estimated \$760-\$935 billion, is considered waste, and a significant proportion of this waste is due to repetitive care, overuse, and unnecessary care in the U.S.¹

Examples of low-value care tests include ordering daily labs in stable medicine inpatients, routine urine electrolytes in acute kidney injury, and folate testing in anemia. The Choosing Wisely® national campaign, Journal of Hospital Medicine’s “Things We Do for No Reason,” and JAMA Internal Medicine’s “Teachable Moment” series have provided guidance on areas where common testing or interventions may not benefit patient outcomes.

The COVID-19 pandemic has raised questions related to other widely utilized practices: Can medication times be readjusted to allow only one entry into the room? Will these labs or imaging studies actually change management? Are vital checks every 4 hours needed?

Why did it take the COVID-19 threat to our medical system to force many of us to have these discussions? Despite prior efforts to integrate high-value care into hospital practices, long-standing habits and deep-seeded culture are challenging to overcome. Once clinicians develop practice habits, these behaviors tend to persist throughout their careers.² In many ways, COVID-19 was like hitting a “reset button” as health care professionals were forced to rapidly confront their deeply-ingrained hospital practices and habits. From new protocols for patient rounding to universal masking and social distancing to ground-breaking strategies like awake proning, the response to COVID-19 has represented an unprecedented rapid shift in practice. Previously, consequences of overuse were too downstream or too abstract for clinicians to see in real time. However, now the ramifications of these



Dr. Rawal



Dr. Linker



Dr. Moriates

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choices hit closer to home with obvious potential consequences – like spreading a terrifying virus.

There are three interventions that hospitalists should consider implementing immediately in the COVID-19 era that accelerate us toward high-value care. Routine lab tests, imaging, and overnight vitals represent opportunities to provide patient-centered care while also remaining cognizant of resource utilization.

One area in hospital medicine that has proven challenging to significantly change practice has been routine daily labs. Patients on a general medical inpatient service who are clinically stable generally do not benefit from routine lab work.³ Avoiding these tests does not increase mortality or length of stay in clinically stable patients.³ However, despite this evidence, many patients with COVID-19 and other conditions experience lab draws that are not timed together and are done each morning out of “routine.” Choosing Wisely® recommendations from the Society of Hospital Medicine encourage clinicians to question routine lab work for COVID-19 patients and to consider batching them, if possible.^{3,4} In COVID-19 patients, the risks of not batching tests are magnified, both in terms of the patient-centered experience and for clinician safety. In essence, COVID-19 has pushed us to consider the elements of safety, PPE conservation, and other factors, rather than making decisions based solely on their own comfort, convenience, or historical practice.

nience, or historical practice.

Clinicians are also reconsidering the necessity of imaging during the pandemic. The “Things We Do for No Reason” article on “Choosing Wisely” in the COVID-19 era highlights this well.⁴ It is more important now than ever to decide whether the timing and type of imaging will change management for your patient. Questions to ask include: Can a portable x-ray be used to avoid patient travel, and will that CT scan help your patient? A posterior-anterior/lateral x-ray can potentially provide more information depending on the clinical scenario. However, we now need to assess if that extra information is going to impact patient management. Downstream consequences of these decisions include not only risks to the patient but also infectious exposures for staff and others during patient travel.

Lastly, overnight vital sign checks are another intervention we should analyze through this high-value care lens. The Journal of Hospital Medicine released a “Things We Do for No Reason” article about minimizing overnight vitals to promote uninterrupted sleep at night.⁵ Deleterious effects of interrupting the sleep of our patients include delirium and patient dissatisfaction.⁵ Studies have shown the benefits of this approach, yet the shift away from routine overnight vitals has not yet widely occurred.

COVID-19 has pressed us to save PPE and minimize exposure risk; hence, some centers are coordinat-

Continued on following page

COVID-19 mortality in hospitalized HF patients

Results emphasize importance of equal access to services

By Debra L. Beck

Patients with heart failure who are infected with SARS-CoV-2 are at high risk for complications, with nearly 1 in 4 dying during hospitalization, according to a large database analysis that included more than 8,000 patients who had heart failure and COVID-19.

In-hospital mortality was 24.2% for patients who had a history of heart failure and were hospitalized with COVID-19, as compared with 14.2% for individuals without heart failure who were hospitalized with COVID-19.

For perspective, the researchers compared the patients with heart failure and COVID-19 with patients who had a history of heart failure and were hospitalized for an acute worsening episode: The risk for death was about 10-fold higher with COVID-19.

“These patients really face remarkably high risk, and when we compare that to the risk of in-hospital death with something we are a lot more familiar with – acute heart failure – we see that the risk was about 10-fold greater,” said first author Ankeet S. Bhatt, MD, MBA, from Brigham and Women’s Hospital and Harvard Medical School, both in Boston.

In an article published online in JACC Heart Failure on Dec. 28 (doi: 10.1016/j.jchf.2020.11.003), a group led by Dr. Bhatt and senior author Scott D. Solomon, MD, reported an analysis of administrative data on a total of 2,041,855 incident hospitalizations logged in the Premier Healthcare Database between April 1, 2020, and Sept. 30, 2020.

The Premier Healthcare Database comprises data from more than 1 billion patient encounters, which equates to approximately 1 in every 5 of all inpatient discharges in the United States.

Of 132,312 hospitalizations of patients with a history of heart failure, 23,843 (18.0%) were hospitalized with acute heart failure, 8,383 patients (6.4%) were hospitalized with COVID-19, and 100,068 (75.6%) were hospitalized for other reasons.

Outcomes and resource utilization were compared with 141,895 COVID-19 hospitalizations of patients who did not have heart failure.

Patients were deemed to have a history of heart

failure if they were hospitalized at least once for heart failure from Jan. 1, 2019, to March 21, 2020, or had at least two heart failure outpatient visits during that period.

In a comment, Dr. Solomon noted some of the pros and cons of the data used in this study.

“Premier is a huge database, encompassing about one-quarter of all the health care facilities in the United States and one-fifth of all inpatient visits, so for that reason we’re able to look at things that are very difficult to look at in smaller hospital systems, but the data are also limited in that you don’t have as much granular detail as you might in smaller datasets,” said Dr. Solomon.

“One thing to recognize is that our data start at the point of hospital admission, so we’re looking only at individuals who have crossed the threshold in terms of their illness and been admitted,” he added.

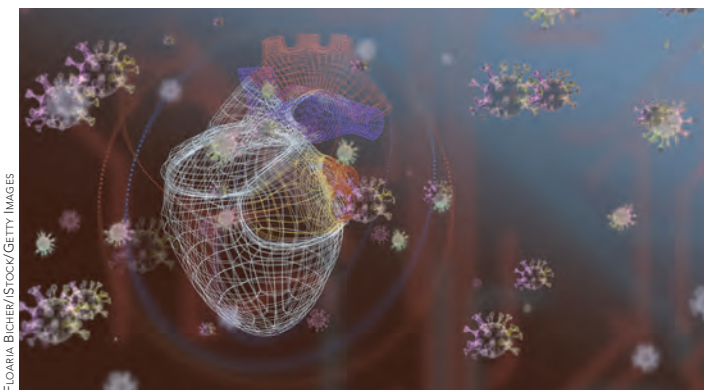
Use of in-hospital resources was significantly greater for patients with heart failure hospitalized for COVID-19, compared with patients hospitalized for acute heart failure or for other reasons. This included “multifold” higher rates of ICU care (29% vs. 15%), mechanical ventilation (17% vs. 6%), and central venous catheter insertion (19% vs. 7%; $P < .001$ for all).

The proportion of patients who required mechanical ventilation and care in the ICU in the group with COVID-19 but who did not have heart failure was similar to those who had both conditions.

The greater odds of in-hospital mortality among patients with both heart failure and COVID-19, compared with individuals with heart failure hospitalized for other reasons, was strongest in April, with an adjusted odds ratio of 14.48, compared with subsequent months (adjusted OR for May-September, 10.11; P for interaction $< .001$).

“We’re obviously not able to say with certainty what was happening in April, but I think that maybe the patients who were most vulnerable to COVID-19 may be more represented in that population, so the patients with comorbidities or who are immunosuppressed or otherwise,” said Dr. Bhatt in an interview.

“The other thing we think is that there may be a learning curve in terms of how to care for patients with acute severe respiratory illness. That includes increased institutional knowledge – like the use of prone ventilation – but also therapies



FLOARIA BICHER/STOCK/GETTY IMAGES

that were subsequently shown to have benefit in randomized clinical trials, such as dexamethasone,” he added.

“These results should remind us to be innovative and thoughtful in our management of patients with heart failure while trying to maintain equity and good health for all,” wrote Nasrien E. Ibrahim, MD, from Massachusetts General Hospital, Boston; Ersilia DeFillipis, MD, Columbia University, New York; and Mitchel Psotka, MD, PhD, Innova Heart and Vascular Institute, Falls Church, Va., in an editorial accompanying the study.

The data emphasize the importance of ensuring equal access to services such as telemedicine, virtual visits, home nursing visits, and remote monitoring, they noted.

“As the COVID-19 pandemic rages on and disproportionately ravages socioeconomically disadvantaged communities, we should focus our efforts on strategies that minimize these inequities,” the editorialists wrote.

Dr. Solomon noted that, although Black and Hispanic patients were overrepresented in the population of heart failure patients hospitalized with COVID-19, once in the hospital, race was not a predictor of in-hospital mortality or the need for mechanical ventilation.

Dr. Bhatt has received speaker fees from Sanofi Pasteur and is supported by a National Institutes of Health/National Heart, Lung, and Blood Institute postdoctoral training grant. Dr. Solomon has received grant support and/or speaking fees from a number of companies and from the NIH/NHLBI. The editorialists disclosed no relevant financial relationships.

A version of this article originally appeared on Medscape.com.

Continued from previous page

ing the timing of vitals with medication administration times, when feasible. In the stable patient recovering from COVID-19, overnight vitals may not be necessary, particularly if remote monitoring is available. This accomplishes multiple goals: providing high quality patient care, reducing resource utilization, and minimizing patient nighttime interruptions – all cul-

minating in high-value care.

Even though the COVID-19 pandemic has brought unforeseen emotional, physical, and financial challenges for the health care system and its workers, there may be a silver lining. The pandemic has sparked high-value care discussions, and the urgency of the crisis may be instilling new practices in our daily work. This virus has indeed left a terrible wake of destruction,

but may also be a nudge to permanently change our culture of overuse to help us shape the habits of all trainees during this tumultuous time. This experience will hopefully culminate in a culture in which clinicians routinely ask, “How will this intervention help the patient?”

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COVID-19 Centers of Excellence series

The state of inpatient COVID-19 care

A brief evidence-based review of everything we have learned

By W. Michael Brode, MD

Evidence on emerging treatments for COVID-19 has been incomplete, often disappointing, and rapidly changing. The concept of a practice-changing press release is as novel as the coronavirus. The pandemic has created an interdependent set of inpatient challenges: keeping up with evolving science and operationalizing clinical workflows, technology, and therapeutics to adapt what we are learning.

At Dell Medical School, we have created a Therapeutics and Informatics Committee to put evidence into practice in real time, and below is a brief framework of what we have learned to date:

The COVID-19 disease course can be broken down into three stages, and workup and interventions should be targeted to those stages.¹⁻³

Stage 1 is the viral phase following a median 5-day presymptomatic phase from exposure; this is indistinguishable from an influenza-like illness with the typical fever, cough, GI symptoms, and the more specific anosmia, ageusia, and orthostasis.



SOUTH AGENCY/GETTY IMAGES

In the absence of a single therapeutic cure or breakthrough, caring for a COVID-19 patient requires the hospital system to instead do a thousand things conscientiously and consistently.

Stage 2 is the pulmonary phase where patients develop COVID-19 pneumonia and will have diffuse chest infiltrates on imaging. This stage usually represents the tail end of the viral phase prior to recovery, but for the ~15% of patients who present to the hospital needing admission because of hypoxemia (the definition of severe COVID-19, typically 5-7 days from symptom onset) this phase is characterized by elevated inflammatory markers and an exuberant host-immune response.

Stage 3 is the dreaded thrombo-inflammatory phase, which is a late manifestation usually

>10 days from symptom onset and seems to be independent of viral replication. The morbidity and mortality associated with COVID-19 is likely a result of diffuse microthrombosis, and critical disease should no longer be thought of as a “cytokine storm,” but as life-threatening organ dysfunction caused by a dysregulated host response to infection. Unlike sepsis, the predominant pathology is not vasodilation and shock, but a hypercoagulable state with diffuse endothelial damage.^{4,5}

Workup on presentation to the hospital should focus on identifying which phase of illness the patient is in, based on timing of symptom onset, inflammatory markers, and end-organ damage. CBC, CMP, D-dimer, troponin, and CRP are likely sufficient baseline labs in addition to a chest X-ray. There are many risk stratification tools, but to date, the 4C Mortality Score is recommended because of its large derivation cohort and reliance on only eight practical variables.⁶

Remdesivir and convalescent plasma (CVP) disrupt viral replication in stages 1 and 2 of the illness. Remdesivir has shown efficacy reducing hospital length of stay and a small trend towards decreasing mortality, especially if given within 10 days of symptom onset, although its effectiveness in general use is very small, if it exists at all.^{7,8} CVP efficacy has been disappointing and should not be the standard of care: Multiple RCTs do not show any clinical benefit, although the Mayo Clinic registry data suggest that high-titer CVP given within 3 days from diagnosis decreases mortality, compared with low-titer plasma.⁹⁻¹¹ Monoclonal antibodies are theoretically “supercharged” high-titer CVP, but are approved for outpatient use only. Trials for inpatients requiring oxygen were stopped because of futility.

Dexamethasone is the only treatment with a proven mortality benefit. The RECOVERY trial showed the greatest mortality benefit (number needed to treat [NNT] of 8) in mechanically ventilated patients >7 days from symptom onset. While there is a benefit to patients requiring any oxygen (NNT of 30), early administration to patients in the viral phase is associated with higher mortality as corticosteroids can reduce viral clearance.¹² Corticosteroids should therefore be targeted to a therapeutic window to reduce the dysregulated host immune response and treat acute respiratory distress syndrome in phases 2 and 3.

Incidence of venous thromboembolism (VTE) increases linearly with disease severity (meta-analysis showing a rate of 24% in the ICU¹³) and autopsy studies demonstrate diffuse microthrombosis even when VTE was not suspected.⁵ Observational studies have shown VTE pharmacoprophylaxis reduces mortality, but the optimal agent, timing, and intensity of regimens is not clear.¹⁴⁻¹⁶ Major society guidelines are equivocal on the use of anticoagulation, despite many institutions adopting higher prophylactic VTE doses for patients based on elevated D-dimer

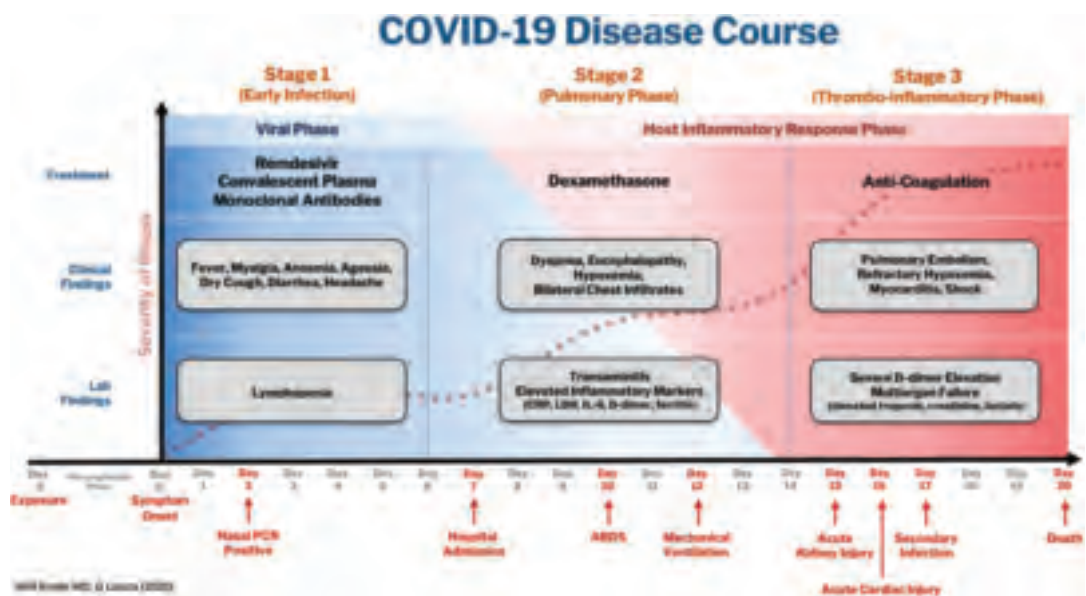


Dr. Brode is a practicing internal medicine physician at Dell Seton Medical Center and assistant professor in the Department of Internal Medicine at Dell Medical School, both in Austin, Tex. He is a clinician educator who emphasizes knowing the patient as a person first, evidence-based diagnosis, and comprehensive care for the patients who are most vulnerable. This article is part of a series originally published in The Hospitalist, the official blog of SHM.

levels or disease severity. Anticoagulation trials in COVID-19 are ongoing, but for now intensified regimens vs. equipoise remain expert opinion only.

The most important treatment remains delivering oxygen with fidelity, correcting the much-observed “silent” or “happy hypoxemic.”¹⁷ Given the high mortality associated with mechanical ventilation and that hypoxemia can be out of proportion to respiratory distress, arbitrary thresholds should not be used to decide when to intubate and instead should evaluate work of breathing, hypercapnia, mentation, or progression of end-organ damage rather than a single cutoff.¹⁸ High-flow nasal cannula (HFNC) can correct severe hypoxemia in addition to self-proning, and while there are scant outcomes data for this strategy, it has been adopted widely as ICU capacity is strained nationally. A ventilator can add PEEP for alveolar recruitment or perform the work of breathing for a patient, but a patient will receive 100% FiO₂ whether it is delivered through the nares on HFNC or 10 inches lower by an endotracheal tube.

In the absence of a single therapeutic cure or breakthrough, caring for a COVID-19 patient requires the hospital system to instead do a thousand things conscientiously and consistently. This is supportive care: Most patients will get better with time and attentive evaluation for end-organ complications like myocarditis, encephalopathy, or pressure ulcers. It requires nursing-to-patient ratios that allow for this type of vigilance, with shared protocols, order sets, and



close communication among team members that provide this support. The treatment of COVID-19 continues to evolve, but as we confront rising hospital volumes nationally, it is important to standardize care for patients throughout each of the three stages of illness until we find that single breakthrough.

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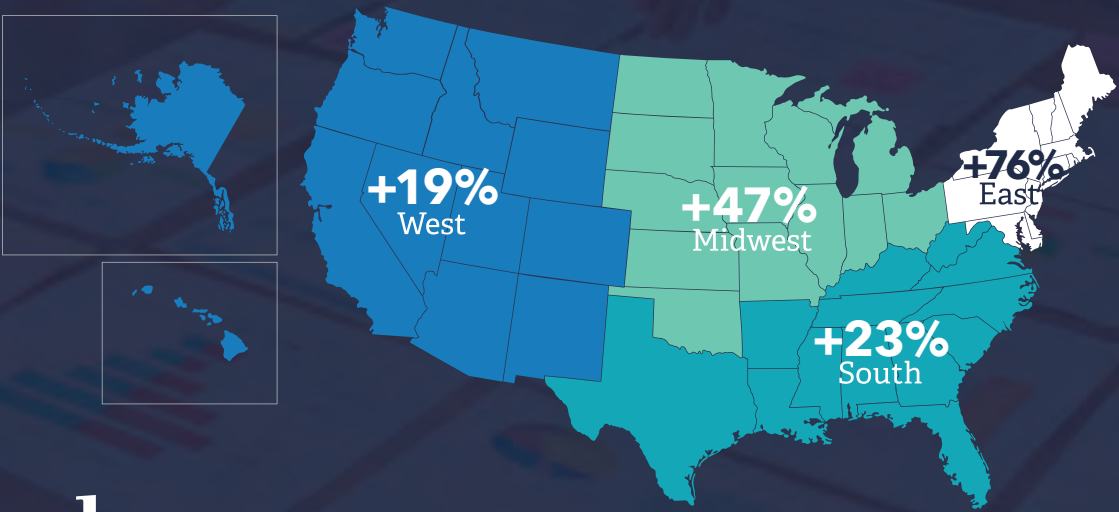
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Hospital medicine groups are getting larger.

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Twitter chat

Continued from page 1

ferences have been curtailed.

The online #JHMchat community began in 2015, shortly after Dr. Wray completed a hospitalist research fellowship at the University of Chicago. His fellowship mentor, Vineet Arora, MD, MAPP, MHM, associate chief medical officer for the clinical learning environment at University of Chicago Medicine, had noticed how other online medical communities were engaging in discussions around different topics.

"She thought it could be a great way for hospitalists to meet online and talk about the articles published in JHM," Dr. Wray explained. "We were all getting into social media and learning how to moderate interactive discussions such as Twitter."

The chat's founders approached JHM's then-editor Andrew Auerbach, MD, MHM, a hospitalist at UCSE, who agreed that it was a great idea. They asked Christopher Moriates, MD, author of a recently published paper on the advisability of nebulized bronchodilators for obstructive pulmonary symptoms and assistant dean for health care value at the University of Texas, Austin, to come on the chat and talk about his paper. Visiting Dr. Arora at the time, he joined her in her living room for the first chat on Oct. 12, 2015. Seventy-five participants posted 431 tweets, with a total of 2 million Twitter impressions, suggesting that they had tapped a latent need.

How the chat works

To participate in the JHM chats on Twitter, one needs to open an account on the platform (it's free) and follow the Journal's Twitter feed (@jhospmedicine). But that's pretty much it, Dr. Wray said. The group convenes on a Monday evening each month for an hour, starting at 9 p.m. Eastern time. Upcoming chats and topics are announced on Twitter and at SHM's website (www.hospital-medicine.org/professional-development/jhmchat/).

The chats have grown and evolved since 2015, shifting in focus given recent social upheavals over the pandemic and heated discussions about diversity, equity, and racial justice in medicine, he said. "When COVID hit, the journal's editor – Dr. Samir Shah – recognized that we were in a unique moment with the pandemic. The journal took advantage of the opportunity to publish a lot more personal

perspectives and viewpoints around COVID, along with a special issue devoted to social justice."

Moderators for the chat typically choose three or four questions based on recently published articles or other relevant topics, such as racial inequities in health care or how to apply military principles to hospital medicine leadership. "We reach out to authors and tell them



Dr. Vineet Arora

"We can forget that physicians are like everyone else. They like to learn, but they want that learning to be fun."

they can explain their articles to interested readers through the chat. I can't think of a single one who said no. They see the opportunity to highlight their work and engage with readers who want to ask them questions," Dr. Wray said.

The moderators' questions are posed to stimulate participation, but another goal is to use that hour for networking. "It's a powerful tool to allow SHM members to engage with each other," he said. "Sometimes the chat has the feeling of trying to drink water from a fire hose – with the messages flashing past so quickly. But the key is not to try to respond to everything but rather to follow those threads that particularly interest you. We encourage you to engage, but it's totally fine if you just sit back and observe. One thing we have done to make it a little more formal is to offer CME credits for participants."

The chat welcomes hospitalists and nonhospitalists, nurse practitioners, physician assistants, academics, and nonacademics. "No matter how engaged you are with

Twitter, if you have 10,000 followers or 10, we'll amplify your voice," he said. "We also have medical students participating and consider their perspectives valuable, too."

Dr. Wray identified three main types of participant in the monthly chats. The first are regulars who come every month, rain or shine. Like the character Norm in the old television comedy "Cheers," everybody knows their name. They become friends, sharing and reveling in each other's accomplishments. "These are people who have multiple connections, personally and professionally, at a lot of different levels. I probably know a hundred or more people who I've primarily gotten to know online."

A second and larger group might be drawn in because of an interest in a specific topic or article, but they're also welcome to participate in the chat. And the third group may lurk in the background, following along but not commenting. The size of that third group is unknown, but metrics from SHM show a total of 796 participants posting 4,088 tweets during chats in 2020 (for an average of 132 participants and 681 tweets per chat). This adds up to a total of 34 million impressions across the platform for #JHMchat tweets for the year.

Creating community online

"Why do we do it? It's difficult to read all of the relevant published articles and keep up to date," said Dr. Arora, a medical educator whose job at Chicago Medicine is to improve the clinical learning environment for trainees and staff by aligning learning with the health system's institutional quality, safety, and value missions.

"Our idea was to bring together a kind of virtual journal club and have discussions around topics such as: How do you create a shared vision on rounds? How do you integrate that into clinical practice? How do we preserve work/life balance or address structural racism?" she said. Other topics have included workflow concerns, burnout, difficult conversations with patients, and career planning.

"The people we're trying to reach are hospitalists – and they're busy at the front lines of care. We also thought this was an interesting way to raise the journal's profile and spark broader interest in the articles it publishes. But it's really about creating community, with people who

look forward to talking and connecting with each other each month through the chats," Dr. Arora said. If they miss a chat, they feel they've missed important interactions.

"Many times when people log onto the chat, they give a status report on where they are at, such as 'I'm home putting my kids to bed,' or 'I'm on call tonight,'" she added. "People are willing to engage with the medium because it's easy to engage with. We can forget that physicians are like everyone else. They like to learn, but they want that learning to be fun."

On Dec. 14, 2020, at 9 p.m. Eastern time, the first question for the monthly #JHMchat was posted: How will caring for COVID-19 patients this winter differ from caring for patients in the first wave? Given that another surge of hospitalized COVID patients is looming, participants posted that they feel familiar and more confident with effective clinical strategies for hospitalized COVID patients, having learned so much more about the virus. But they're facing greater numbers of patients than in prior surges. "In March, we were in crisis, now we're in complexity," one noted.

Joining the moderators was the Pediatric Overflow Planning Contingency Response Network (POPCoRN), a group formed earlier this year to help mobilize pediatric medical capacity for COVID patients during pandemic surges (see "POPCoRN network mobilizes pediatric capacity during pandemic," *The Hospitalist*, April 30, 2020). One of its questions involved the redeployment of physicians in response to COVID demands and what, for example, pediatric hospitalists need as resources and tools when they are reassigned to adult patients or to new roles in unfamiliar settings. A variety of educational resources were cited from POPCoRN, SHM, and ImproveDX, among others.

Defining medical communication

Another chat moderator is Angela Castellanos, MD, a pediatric hospitalist at Tufts Medical Center in Boston. Dr. Castellanos did a 1-year, full-time fellowship right after residency at the New England Journal of Medicine, participating hands-on as a member of the editorial team for the print and online editions of the venerable journal. She is now

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Reducing postop Afib in CABG patients

Efficacy of calcium-induced atrial autonomic denervation

By Caleb Rans, PharmD

Intraoperative injection of calcium chloride into the four major atrial ganglionated plexi (GPs) reduced the incidence of early postoperative atrial fibrillation (POAF) in patients undergoing off-pump coronary artery bypass grafting (CABG) surgery, in a proof-of-concept study.

"[We] hypothesized that injecting [calcium chloride] into the major atrial GPs during isolated CABG can reduce the incidence of POAF by calcium-induced autonomic neurotoxicity," wrote Huishan Wang, MD, of the General Hospital of Northern Theater Command in Shenyang, China, and colleagues. Their report was published in the *Journal of the American College of Cardiology* (2021 Jan 4;77[1]:57-67).

The single-center, sham-controlled, proof-of-concept study included 200 patients without a history of AF undergoing isolated, off-pump CABG surgery. Participants were randomized (1:1) to receive an injection of either 5% calcium chloride or 0.9% sodium chloride into the four major GPs during CABG.

Post surgery, patients were monitored for the occurrence of POAF using routine 12-lead ECG and 7-day continuous telemetry and Holter monitoring. The primary endpoint was the incidence of POAF lasting 30 seconds or longer through 7 days. Various secondary outcomes, including POAF burden and length of hospitalization, were also measured.

After analysis, the researchers found that 15 patients in the calcium chloride arm and 36 patients in the sodium chloride arm developed POAF

during the first 7 days post CABG, corresponding to a POAF hazard reduction of 63% (hazard ratio, 0.37; 95% confidence interval, 0.21-0.64; $P = .001$) with no significant adverse effects observed among study patients.

The calcium chloride injection also resulted in reduced AF burden and lower rates of amiodarone and esmolol use to treat POAF; however, there was no difference in the length of

"The unanswered question is whether preventing perioperative AF will prevent stroke, heart failure, and death."

hospitalization between the two groups. The incidences of nonsustained atrial tachyarrhythmia (less than 30 seconds) and atrial couplets were also significantly reduced in the calcium chloride group.

"We selected the 4 major atrial GPs as our targets because [of] their role in the initiation and maintenance of AF is more established than other cardiac neural plexi," the researchers explained. "Interruption of the atrial neural network by Ca-mediated GP neurotoxicity may underlie the therapeutic effects."

Is 'nuisance' arrhythmia worth targeting?

In an editorial accompanying the report, John H. Alexander, MD, MHS, wrote that intraoperative calcium chloride atrial ganglionic ablation can now be considered as an effective intervention to prevent POAF in patients undergoing cardiac

surgery. "These investigators should be congratulated for studying post-operative atrial fibrillation in cardiac surgery," he stated in the *Journal of the American College of Cardiology* (2021 Jan 4;77[1]:68-70).

"However, this trial has two significant limitations. Firstly, it was conducted in a single center in a very homogeneous population; secondly, POAF, in and of itself, is largely a nuisance arrhythmia and hardly worth preventing, but is associated with a higher risk of other adverse outcomes," Dr. Alexander, professor of medicine at Duke University, Durham, N.C., said in an interview.

"The unanswered question is whether preventing perioperative AF will prevent stroke, heart failure, and death," he further explained. "Answering these questions would require a larger trial (or trials) with longer term (months to years) follow-up."

Dr. Wang and colleagues acknowledged that the current study was underpowered for some secondary outcomes, such as length of hospitalization. They explained that a large sample size is needed to detect a difference in length of hospitalization, as well as other outcomes.

"Further studies are needed to confirm the safety and efficacy of calcium-induced atrial autonomic denervation in patients undergoing on-pump CABG and surgery for valvular heart disease," they concluded.

The study was funded by the Provincial Key R & D Program in China. One author reported holding a U.S. patent related to the study. The remaining authors had no relevant relationships to disclose.

Continued from previous page

working as a digital media fellow with JHM, a part-time commitment while holding down a full-time job as a hospitalist. She also puts together a Spanish-language podcast covering primary care pediatric issues for parents and families.

"I'm interested in medical communication generally, as I try to figure out what that means," she said. "I have continued to look for ways to be part of the social media community and to be more creative about it. The JHM fellowship came at a perfect time for me to learn to do more in digital media."

COVID has created new opportunities for more immediate dialogue with colleagues – what are they seeing, and what's working in the absence of clinical trials, she explained. "That's how we communicate, as a way to get information out fast, such as when hospitals began proning COVID patients to make it easier for them to breathe."



Dr. Angela Castellanos

Dr. Castellanos said she grew up with text messaging and social media and wants to continue to grow her skills in this area. "I think I developed some skills at NEJM, but the opportunity to see how they do things at another journal with a different mission was also valuable. I get to share the space with people in academic settings and leaders in my field. I tweet at them; they tweet

"I'm interested in medical communication generally. ... I have continued to look for ways to be part of the social media community and to be more creative about it. The JHM fellowship came at a perfect time for me to learn to do more."

at me. These two fellowships have given me unique insights and mentorships. I know I want to continue doing pediatric hospital medicine and to engage academically and learn how to do research."

Twitter sometimes gets a bad reputation for hostile or incendiary posts, Dr. Wray noted. "If you look at social media writ large, it can sometimes seem like a dumpster fire." But

what has happened in the medical community and in most medical Twitter encounters is a more cordial approach to conversations. "People who work in medicine converse with each other, with room for respectful disagreements. We're extra supportive of each other," he said.

"I think if hospitalists are looking for a community of peers, to engage with them and network and to find colleagues in similar circumstances, the JHM chat is such a fantastic place," Dr. Wray concluded. "Don't just come once; come several times; meet people along the way. For me, one of the most beneficial ways to advance my career has been by connecting with people through the chat. It allows me to share my work and success with the hospitalist community, as well as highlighting my trainees' and colleagues' successes, and it has created opportunities I never would have expected for getting involved in other projects."

Children's hospitals grapple with wave of mental illness

By Carmen Heredia Rodriguez
Kaiser Health News

Krissy, age 15, had attempted suicide before, but never with pills.

The teen was diagnosed with schizophrenia when she was 9. People with this chronic mental health condition perceive reality differently and often experience hallucinations and delusions. She learned to manage these symptoms with a variety of services offered at home and at school.

But the pandemic upended those lifelines. She lost much of the support offered at school. She also lost regular contact with her peers. Her mother lost access to respite care – which allowed her to take a break.

On a Thursday in October, the isolation and sadness came to a head. As Krissy's mother, Patricia Williams, called a mental crisis hotline for help, she said, Krissy stood on the deck of their Maryland home with a bottle of pain medication in

one hand and water in the other.

Before Patricia could react, Krissy placed the pills in her mouth and swallowed.

Efforts to contain the spread of the novel coronavirus in the United States have led to drastic changes in the way children and teens learn, play, and socialize. Tens of millions of students are attending

“It's only a matter of time before a tsunami sort of reaches the shore of our service system, and it's going to be overwhelmed with the mental health needs of kids.”

school through some form of distance learning. Many extracurricular activities have been canceled. Playgrounds, zoos, and other recreational spaces have closed. Kids like

Krissy have struggled to cope, and the toll is becoming evident.

Government figures show the proportion of children who arrived in EDs with mental health issues increased 24% from mid-March through mid-October, compared with the same period in 2019. Among preteens and adolescents, it rose by 31%. Anecdotally, some hospitals said they are seeing more cases of severe depression and suicidal thoughts among children, particularly attempts to overdose.

The increased demand for intensive mental health care that has accompanied the pandemic has worsened issues that have long plagued the system. In some hospitals, the number of children unable to immediately get a bed in the psychiatric unit rose. Others reduced the number of beds or closed psychiatric units altogether to reduce the spread of COVID-19.

“It's only a matter of time before a tsunami sort of reaches the shore of our service system, and it's going to be overwhelmed with the mental health needs of kids,” said Jason Williams, PsyD, a psychologist and director of operations of the Pediatric Mental Health Institute at Children's Hospital Colorado, Aurora.

“I think we're just starting to see the tip of the iceberg, to be honest with you.”

Before COVID, more than 8 million kids between ages 3 and 17 were diagnosed with a mental or behavioral health condition, according to the most recent National Survey of Children's Health. A separate survey from the Centers for Disease Control and Prevention found one in three high school students in 2019 reported feeling persistently sad and hopeless – a 40% increase from 2009.

The coronavirus pandemic appears to be adding to these difficulties. A review of 80 studies found forced isolation and loneliness among children correlated with an increased risk of depression.

“We're all social beings, but they're [teenagers] at the point in their development where their peers are their reality,” said Terrie Andrews, PhD, a psychologist and administrator of behavioral health at Wolfson Children's Hospital in Jacksonville, Fla. “Their peers are their grounding mechanism.”

Children's hospitals in Colorado,

Missouri, and New York all reported an uptick in the number of patients who thought about or attempted suicide. Clinicians also mentioned spikes in children with severe depression and those with autism who are acting out.

The number of overdose attempts among children has caught the attention of clinicians at two facilities. Dr. Andrews said the facility gives out lockboxes for weapons and medication to the public – including parents who come in after children attempted to take their life using medication.

Children's National Hospital in Washington also has experienced an uptick, said Colby Tyson, MD, associate director of inpatient psychiatry. She's seen children's mental health deteriorate because of a likely increase in family conflict – often a consequence of the chaos caused by the pandemic. Without school, connections with peers, or employment, families don't have the opportunity to spend time away from one another and regroup, which can add stress to an already tense situation.

“That break is gone,” she said.

The higher demand for child mental health services caused by the pandemic has made finding a bed at an inpatient unit more difficult.

Now, some hospitals report running at full capacity and having more children “boarding,” or sleeping in EDs before being admitted to the psychiatric unit. Among them is the Pediatric Mental Health Institute at Children's Hospital Colorado. Dr. Williams said the inpatient unit has been full since March. Some children now wait nearly 2 days for a bed, up from the 8-10 hours common before the pandemic.

Cincinnati Children's Hospital Medical Center in Ohio is also running at full capacity, said clinicians, and had several days in which the unit was above capacity and placed kids instead in the emergency department waiting to be admitted. In Florida, Dr. Andrews said, up to 25 children have been held on surgical floors at Wolfson Children's while waiting for a spot to open in the inpatient psychiatric unit. Their wait could last as long as 5 days, she said.

Multiple hospitals said the usual

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Pediatric In the Lit

SARS-CoV-2 in hospitalized children and youth

Clinical syndromes and predictors of disease severity

By Anika Kumar, MD, FHM, FAAP

FROM THE JOURNAL OF PEDIATRICS

CLINICAL QUESTIONS: What are the demographics and clinical features of pediatric severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) syndromes, and which admitting demographics and clinical features are predictive of disease severity?

BACKGROUND: In children, SARS-CoV-2 causes respiratory disease and multisystem inflammatory syndrome in children (MIS-C) as well as other clinical manifestations. The authors of this study chose to address the gap of identifying characteristics for severe disease caused by SARS-CoV-2, including respiratory disease, MIS-C, and other manifestations.

STUDY DESIGN: Retrospective and prospective cohort analysis of hospitalized children

SETTING: Participating hospitals in Tri-State Pediatric COVID-19 Consortium, including hospitals in New York, New Jersey, and Connecticut.

SYNOPSIS: The authors identified hospitalized patients 22 years old or younger who had a positive SARS-CoV-2 test or met the U.S. Centers for Disease Control and Prevention's MIS-C case definition. For comparative analysis, patients were divided into a respiratory disease group (based on the World Health Organization's criteria for COVID-19), MIS-C group, or other group (based on the primary reason for hospitalization).

The authors included 281 patients in the study. 51% of the patients presented with respiratory disease, 25% with MIS-C, and 25% with other symptoms, including gastrointestinal, or fever; 51% of all patients were Hispanic and 23% were non-Black Hispanic. The most common pre-existing comorbidities among all groups were obesity (34%) and asthma (14%).

Patients with respiratory disease had a median age of 14 years while those with MIS-C had a median age of 7 years. Patients more commonly identified as non-Hispanic Black in the MIS-C group vs. the respiratory group (35% vs. 18%). Obesity and medical complexity were more prevalent in the respiratory group relative to the MIS-C group: 75% of patients with MIS-C had gastrointestinal symptoms; 44% of respiratory patients had a chest radiograph with bilateral infiltrates on admission, and 18% of respiratory patients required invasive mechanical ventilation. The most common complications in the respiratory group were acute respiratory distress syndrome (17%) and acute kidney injury (11%), whereas shock (35%) and cardiac dysfunction (25%) were the most common complications in the MIS-C group. The median length of stay for all patients was 4 days (IQR 2-8 days).

Patients with MIS-C were more likely to be admitted to the intensive care unit but all deaths (seven patients) occurred in the respiratory group. Forty percent of patients with respiratory disease, 56% of patients with MIS-C, and 6% of other patients met the authors' definition of severe disease (ICU admission > 48 hours). For the respiratory group, younger age, obesity, increasing white blood cell count, hypoxia, and bilateral infiltrates on chest radiograph were independent predictors of severe disease based on multivariate analyses. For the MIS-C group, lower absolute lymphocyte count and increasing CRP at admission were independent predictors of severity.

BOTTOM LINE: Mortality in pediatric patients is low. Ethnicity and race were not predictive of disease severity in this model, even though 51% of the patients studied were Hispanic and 23% were non-Hispanic Black. Severity of illness for patients with respiratory disease was found to



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be associated with younger age, obesity, increasing white blood cell count, hypoxia, and bilateral infiltrates on chest radiograph. Severity of illness in patients with MIS-C was associated with lower absolute lymphocyte count and increasing CRP.

CITATION: Fernandes DM et al. Severe acute respiratory syndrome coronavirus 2 clinical syndromes and predictors of disease severity in hospitalized children and youth. *J Pediatr*. 2020 Nov 14;S0022-3476(20):31393-7. doi: 10.1016/j.jpeds.2020.11.016.

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summer slump in child psychiatric admissions was missing last year. "We never saw that during the pandemic," said Dr. Andrews. "We stayed completely busy the entire time."

Some facilities have decided to reduce the number of beds available to maintain physical distancing, further constricting supply. Children's National in D.C. cut five beds from its unit to maintain single occupancy in every room, said Adelaide Robb, MD, division chief of psychiatry and behavioral sciences.

The measures taken to curb the spread of COVID have also affected the way hospitalized children receive mental health services. In addition to providers wearing protective equipment, some hospitals

like Cincinnati Children's rearranged furniture and placed cues on the floor as reminders to stay 6 feet apart. The University of Pittsburgh Medical Center's Western Psychiatric Hospital and other facilities encourage children to keep their masks on by offering rewards like extra computer time. Patients at Children's National now eat in their rooms, a change from when they ate together.

Despite the need for distance, social interaction still represents an important part of mental health care for children, clinicians said. Facilities have come up with various ways to do so safely, including creating smaller pods for group therapy. Children at Cincinnati Children's Hospital can play with

toys, but only with ones that can be wiped clean afterward. No cards or board games, said Suzanne Sampang, MD, clinical medical director for child and adolescent psychiatry at the hospital.

"I think what's different about psychiatric treatment is that, really, interaction is the treatment," she said, "just as much as a medication."

The added infection-control precautions pose challenges to forging therapeutic connections. Masks can complicate the ability to read a person's face. Online meetings make it difficult to build trust between a patient and a therapist.

"There's something about the real relationship in person that the best technology can't give to you," said Dr. Robb.

For now, Krissy is relying on virtual platforms to receive some of her mental health services. Despite being hospitalized and suffering brain damage due to the overdose, she is now at home and in good spirits. She enjoys geometry, dancing on TikTok, and trying to beat her mother at Super Mario Bros. on the Wii. But being away from her friends, she said, has been a hard adjustment.

"When you're used to something," she said, "it's not easy to change everything."

Kaiser Health News is a nonprofit news service covering health issues. It is an editorially independent program of Kaiser Family Foundation, which is not affiliated with Kaiser Permanente.

Key Clinical Question

Akathisia: "Ants in the Pants"

Potentially poor outcome if untreated

By Robert Killeen, MD

Case

The patient is a 65-year-old female with increasing anxiety and agitation. She completed cycle 2 of chemotherapy for breast cancer several hours ago. Her premedication was Reglan (metoclopramide); her only other medication is tamoxifen. Other than breast cancer, she suffers only from osteoarthritis. She is found pacing about the ward – almost uncontrollably. She feels she must move, only to have to stop and, shortly afterward, feels the urge to move again. This has never happened to her before. She must move despite being fatigued. She also complains of an odd overall feeling; something akin to "ants in the pants." She is nervous and exhausted. What is her diagnosis and what clues to it are in her presentation?

Background

The word "akathisia" is derived from the Greek language and means "unable to sit." It is thought to occur as a consequence of dopaminergic blockade in the midbrain region. The decrease in dopaminergic activity leads to a subsequent decrease in inhibitory motor control which, in turn, manifests as involuntary movements.

In this malady, the patient is seen as perpetually in motion. The patient feels the need to move until they must stop. But once static, they have the urge to move again. They pace, they rock, and they "fidget" – they just cannot sit still. This feeling has been likened to having "ants in the pants." Patients become anxious, agitated, and suffer from

insomnia. They cannot rest.

If left unresolved akathisia can torment patients to sheer exhaustion. For some it serves as a harbinger of suicide. This toxicity is more commonly seen in the psychiatric pharmacy with the most common offender being haloperidol. The causative agents of the least notoriety are the nonantipsychotics.

Diagnosis and treatment

Akathisia is an extrapyramidal symptom found largely but NOT exclusively with psychiatric medications. There are drugs in the non-psychiatric field that can also cause it, including antiemetics (e.g., metoclopramide), antihypertensives (e.g., diltiazem), and narcotics (e.g., cocaine). Metoclopramide is given

under circumstances ranging from diabetic gastroparesis to premedicating chemotherapy. It is a peripheral and centrally acting dopamine antagonist. There are no lab tests or radiographic workups to diagnose akathisia. Its manifestations are erratic and disturbing, and the prognosis is doleful if unresolved.

The primary intervention for the treatment of akathisia is its recognition and the discontinuation of the offending drug. Beyond this, for symptomatic care, there is a compendium of case reports and small studies supporting many drugs, but only a few have received consistent recommendation. Beta-adrenergic antagonists, such as propranolol, are considered the gold standard, the first choice for the treatment of akathisia. Their toxicities include orthostatic hypotension and bradycardia. Additionally, they are contraindicated in the setting of asthma.

Anticholinergics, such as benztropine (Cogentin) and trihexylphenidyl (Artane) are considered in the literature as second-line treatments, behind beta-blockers. However, the data advocating their use are limited. They have multiple side effects including sedation, memory impairment, visual impairment, and urinary retention. They are also contraindicated in patients with



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closed-angle glaucoma.

An equivalent alternative to beta-blockers could also be the 5HT_{2a} receptor antagonists such as mirtazapine (Remeron) and cyproheptadine (Periactin). This class of medications is thought to act by an inhibitory control of dopaminergic neurons. Sedation and weight gain are the primary toxicities, and they are contraindicated in patients who are breastfeeding.

Benzodiazepines, such as clonaz-

Quiz

1. Which of the following findings occur in Akathisia?

- A. Fidgeting
- B. Pacing
- C. Swinging the legs while seated
- D. All the above

Answer: D

Akathisia is manifest as involuntary hyperactivity of the extremities, particularly the lower extremities. People feel the urge to move, to continue endlessly in motion, stopping only when fatigue sets in. The fidgeting has been described by patients as feeling like "ants in the pants."

2. Which of the following interventions are used to treat akathisia?

- A. Drug discontinuation
- B. Propranolol

- C. Mirtazapine
- D. All the above

Answer: D

All the interventions mentioned are used to treat akathisia. The foremost is to stop the offending drug. Failing this, propranolol is the "gold standard" while 5HT_{2a} antagonists, such as mirtazapine, are favored when beta-blockers either fail or are contraindicated.

3. The use of pyridoxine (Vitamin B₆) in the treatment of akathisia is associated with what toxicities?

- A. Headache
- B. Nausea
- C. Seizures
- D. All the above

Answer: D

The use of Vitamin B₆ in the treatment of akathisia has several drawbacks. Its administration is associated with headache and nausea, and high-dose usage increases the risk of seizure.

4. If unresolved, akathisia can lead to which of the following?

- A. Insomnia
- B. Suicide
- C. Physical exhaustion
- D. All the above

Answer: D

Akathisia, left unrecognized and untreated, can eventually lead to physical exhaustion, and is compounded by difficulties in trying to rest, hence insomnia. The physical and mental torment of this malady can lead to suicide.

epam (klonopin), have shown some efficacy in improving symptoms but the data are very limited. The risk of tolerance and dependence, coupled with the problems of sedation impacting the elderly, prompts their placement in reserve. Vitamin B₆ (pyridoxine), when given in a high-dose format, causes significant improvement in akathisia. However, it can cause headache and nausea. Chronic administration of high doses has also been found to cause a severe and irreversible sensory neuropathy as well as lead to seizures. Many other agents have been studied, but the data are too small to warrant recommendation.

Conclusion

Akathisia remains an extreme reaction to drugs not always in the psychotropic class. The hospitalist will likely deal with the acute onset, a dramatic form, and a potentially poor outcome if untreated. The patient's only true defense is the physician's clinical acumen and their ability to recognize it.

Recommended reading

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Key points

- Although associated more with psychiatric medications, akathisia can occur with nonpsychotropics as well.
- To recognize the illness, the clinician must notice the repetitive involuntary movements and pacing as well as the “ants in the pants” fidgeting involved.
- Primary treatment consists of medication discontinuation with pharmaceutical intervention as a backup.



LINCOLNWOOD620, WIKIMEDIA COMMONS

- Recognition is the key to successful treatment.

Classic signs of akathisia

- Fidgeting – “ants in the pants.”
- Swinging the legs while seated.

- Rocking from foot to foot.
- Walking while in a static position.
- Inability to sit or stand still – pacing.
- Onset appears with the initiation or dose adjustment of an offending drug.

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03.04.21

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is March 4, 2021.

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Society of Hospital Medicine

How can hospitalists change the status quo?

Lean framework for efficiency and empathy of care

By Sowmya Kanikkannan, MD, FACP, SFHM

*"My census is too high."
"I don't have enough time to talk to patients."
"These are outside our scope of practice."*

These are statements that I have heard from colleagues over the last 14 years as a hospitalist. Back in 1996, when Dr. Bob Wachter coined the term "hospitalist," we were still in our infancy – the scope of what we could do had yet to be fully realized. Our focus was on providing care for hospitalized patients and improving quality of clinical care and patient safety. As health care organizations began to see the potential for our field, the demands on our services grew. We grew to comanage patients with our surgical colleagues, worked on patient satisfaction, facilitated transitions of care, and attempted to reduce readmissions – all of which improved patient care and the bottom line for our organizations.

Somewhere along the way, we were expected to staff high patient volumes to add more value, but this always seemed to come with compromise in another aspect of care or our own well-being. After all, there are only so many hours in the day and a limit on what one individual can accomplish in that time.

One of the reasons I love hospital medicine is the novelty of what we do – we are creative thinkers. We have the capacity to innovate solutions to hospital problems based on our expertise as frontline providers for our patients. Hospitalists of every discipline staff a large majority of inpatients, which makes our collective experience significant to the management of inpatient health care. We are often the ones tasked with executing improvement projects, but how often are we involved in their design? I know that we collectively have an enormous opportunity to improve our health care practice, both for ourselves, our patients, and the institutions we work for. But more than just being a voice of advocacy, we need to understand how to positively influence the health care structures that allow us to deliver quality patient care.

It is no surprise that the inefficiencies we deal with in our hos-

pitals are many – daily workflow interruptions, delays in results, scheduling issues, communication difficulties. These are not unique to any one institution. The pandemic added more to that plate – PPE deficiencies, patient volume triage, and resource management are examples. Hospitals often contract consultants to help solve these problems, and many utilize a variety of frameworks to improve these system processes. The Lean framework is one of these, and it originated in the

Lean methodology and tools allow us to systematically identify root causes for the problems we face and help narrow it down to the "vital few."

manufacturing industry to eliminate waste in systems in the pursuit of efficiency.

In my business training and prior hospital medicine leadership roles, I was educated in Lean thinking and methodologies for improving quality and applied its principles to projects for improving workflow. Last year I attended a virtual conference on "Lean Innovation during the pandemic" for New York region hospitals, and it again highlighted how the Lean management methodology can help improve patient care but importantly, our workflow as clinicians. This got me thinking. Why is Lean well accepted in business and manufacturing circles, but less so in health care?

I think the answer is twofold – knowledge and people.

What is Lean and how can it help us?

The "Toyota Production System"–based philosophy has 14 core principles that help eliminate waste in systems in pursuit of efficiency. These principles are the "Toyota Way." They center around two pillars: continuous improvement and respect for people. The cornerstone of this management methodology is based on efficient processes, developing employees to add value to the organization, and continuous improvement through problem-solving

and organizational learning.

Lean is often implemented with Six Sigma methodology. Six Sigma has its origins in Motorola. While Lean cuts waste in our systems to provide value, Six Sigma uses DMAIC (Define, Measure, Analyze, Improve, Control) to reduce variation in our processes. When done in its entirety, Lean Six Sigma methodology adds value by increasing efficiency, reducing cost, and improving our everyday work.

Statistical principles suggest that 80% of consequences comes from 20% of causes. Lean methodology and tools allow us to systematically identify root causes for the problems we face and help narrow it down to the "vital few." In other words, fixing these would give us the most bang for our buck. As hospitalists, we are able to do this better than most because we work in these hospital processes everyday – we truly know the strengths and weaknesses of our systems.

As a hospitalist, I would love for the process of seeing patients in hospitals to be more efficient, less variable, and be more cost effective for my institution. By eliminating the time wasted performing unnecessary and redundant tasks in my everyday work, I can reallocate that time to patient care – the very reason I chose a career in medicine.

We, the people

There are two common rebuttals I hear for adopting Lean Six Sigma methodology in health care. A frequent misconception is that Lean is all about reducing staff or time with patients. The second is that manufacturing methodologies do not work for a service profession. For instance, an article published on Reuters Events (www.reutersevents.com/supplychain/supply-chain/end-just-time) talks about Lean JIT (Just in Time) inventory as a culprit for creating a supply-chain deficit during COVID-19. It is not entirely without merit. However, if done the correct way, Lean is all about involving the frontline worker to create a workflow that would work best for them.

Reducing the waste in our processes and empowering our frontline doctors to be creative in finding solutions naturally leads to cost reduction. The cornerstone of Lean is creating a continuously learning



Dr. Kanikkannan is a practicing hospitalist and assistant professor of medicine at Albany (N.Y.) Medical College. She is a former hospitalist medical director and has served on SHM's national committees, and is a certified Lean Six Sigma black belt and MBA candidate.

organization and putting your employees at the forefront. I think it is important that Lean principles be utilized within health care – but we cannot push to fix every problem in our systems to perfection at a significant expense to the physician and other health care staff.

Why HM can benefit from Lean

There is no hard and fast rule about the way health care should adopt Lean thinking. It is a way of thinking that aims to balance purpose, people, and process – extremes of inventory management may not be necessary to be successful in health care. Lean tools alone would not create results. John Shook, chairman of Lean Global Network, has said that the social side of Lean needs to be in balance with the technical side. In other words, rigidity and efficiency are good, but are is encouraging creativity and flexibility in thinking within the workforce.

In the crisis created by the novel coronavirus, many hospitals in New York state, including my own, turned to Lean to respond quickly and effectively to the challenges. Lean principles helped them problem-solve and develop strategies to both recover from the pandemic surge and adapt to future problems that could occur. Geographic clustering of patients, PPE supply, OR shut down and ramp up, emergency management offices at the peak of the

Continued on following page

NETs a possible therapeutic target for COVID-19 thrombosis?

By Debra L. Beck

Researchers in Madrid may have found a clue to the pathogenesis of ST-segment elevation myocardial infarction (STEMI) in patients with COVID-19; it might also offer a therapeutic target to counter the hypercoagulability seen with COVID-19.

In a case series of five patients with COVID-19 who had STEMI, neutrophil extracellular traps (NETs) were detected in coronary thrombi of all five patients. The median density was 66%, which is significantly higher than that seen in a historical series of patients with STEMI. In that series, NETs were found in only two-thirds of patients; in that series, the median density was 19%.

In the patients with COVID-19 and STEMI and in the patients reported in the prepandemic historical series from 2015, intracoronary aspirates were obtained during percutaneous coronary intervention using a thrombus aspiration device.

Histologically, findings in the patients from 2015 differed from those of patients with COVID-19. In the patients with COVID, thrombi were composed mostly of fibrin and polymorphonuclear cells. None showed fragments of atherosclerotic plaque or iron deposits indicative of previous episodes of plaque rupture. In contrast, 65% of thrombi from the 2015 series contained plaque fragments.

Ana Blasco, MD, PhD, Hospital Universitario Puerta de Hierro-Majadahonda, Madrid, and colleagues report their findings in an article published in JAMA Cardiology.

Commenting on the findings in an

interview, Irene Lang, MD, from the Medical University of Vienna said, "This is really a very small series, purely observational, and suffering from the problem that acute STEMI is uncommon in COVID-19, but it does serve to demonstrate once more the abundance of NETs

"NETs are very much at the cutting edge of thrombosis research, and NET formation provides yet another link between inflammation and clot formation."

in acute myocardial infarction."

"NETs are very much at the cutting edge of thrombosis research, and NET formation provides yet another link between inflammation and clot formation," added Peter Libby, MD, from Harvard Medical School and Brigham and Women's Hospital, Boston.

"Multiple observations have shown thrombosis of arteries large and small, microvessels, and veins in COVID-19. The observations of Blasco et al. add to the growing literature about NETs as contributors to the havoc wrought in multiple organs in advanced COVID-19," he added in an email exchange with this news organization.

Neither Dr. Lang nor Dr. Libby were involved in this research; both have been actively studying NETs and their contribution to cardiovascular thrombotic disease in recent years.

NETs are newly recognized contributors to venous and arterial thrombosis. These weblike DNA strands are extruded by activated or

dying neutrophils and have protein mediators that ensnare pathogens while minimizing damage to the host cell.

First described in 2004, exaggerated NET formation has also been linked to the initiation and accretion of inflammation and thrombosis.



Dr. Libby

"NETs thus furnish a previously unsuspected link between inflammation, innate immunity, thrombosis, oxidative stress, and cardiovascular diseases," Dr. Libby and his coauthors wrote in an article on the topic published in Circulation Research earlier this year.

Limiting NET formation or "dis-

solving" existing NETs could provide a therapeutic avenue not just for patients with COVID-19 but for all patients with thrombotic disease.

"The concept of NETs as a therapeutic target is appealing, in and out of COVID times," said Dr. Lang.

"I personally believe that the work helps to raise awareness for the potential use of deoxyribonuclease (DNase), an enzyme that acts to clear NETs by dissolving the DNA strands, in the acute treatment of STEMI. Rapid injection of engineered recombinant DNases could potentially wipe away coronary obstructions, ideally before they may cause damage to the myocardium," she added.

Dr. Blasco and colleagues and Dr. Lang have disclosed no relevant financial relationships. Dr. Libby is an unpaid consultant or member of the advisory board for a number of companies.

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pandemic, telehealth streamlining, and post-COVID-19 care planning are some areas where the application of Lean resulted in successful responses to the challenges that 2020 brought to our work.

As Warren Bennis said, "The manager accepts the status quo; the leader challenges it." As hospitalists, we can lead the way our hospitals provide care. Lean is not just a way for hospitals to cut costs (although it helps quite a bit there). Its processes and philosophies could enable hos-

pitalists to maximize potential, efficiency, and quality of care, and allow for a balanced work environment. When applied in a manner that focuses on continuous improvement (and is cognizant of its limitations), it has the potential to increase the capability of our service lines and streamline our processes and workday for greater efficiency. As a specialty, we stand to benefit by taking the lead role in choosing how best to improve how we work. We should think outside the box. What better time to do this than now?

“

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Early use of high-titer plasma may prevent severe COVID-19

By Damian McNamara

Administering convalescent plasma that has high levels of antibodies against SARS-CoV-2 within the first 3 days of symptoms was associated with significantly lower chances of progression to severe COVID-19, new evidence demonstrates.

In a trial of 160 older adults with COVID-19, half of whom were randomly assigned to receive plasma and half to receive placebo infusion, treatment with high-titer plasma lowered the relative risk for severe disease by 48% in an intent-to-treat analysis.

“We now have evidence, in the context of a small but well-designed study, that convalescent plasma with high titers of antibody against SARS-CoV-2 administered in the first 3 days of mild symptoms to infected elderly reduces progression of illness and the rate of severe presentations,” senior author Fernando Polack, MD, said in an interview.

“Not any plasma, not any time,” added Dr. Polack, an infectious disease specialist and scientific director at Fundacion INFANT and professor of pediatrics at the University of Buenos Aires. The key, he said, is to select plasma in the upper 28th percentile of IgG antibody concentrations and to administer therapy prior to disease progression.

The study was published online Jan. 6 in *The New England Journal of Medicine*.

“It’s a very good study and approaches a different population from the PlasmAr study,” Ventura Simonovich, MD, chief of the clinical pharmacology section, Medical Clinic Service, Hospital Italiano de Buenos Aires, said in an interview. “This is the first published randomized controlled trial that shows real benefit in this [older adult] population, the most vulnerable in this disease,” he said.

Dr. Simonovich, who was not affiliated with the current study, was lead author of the PlasmAr trial, which was published in *The New England Journal of Medicine* Nov. 24, 2020. In that trial, the researchers evaluated adults aged 18 years and older and found no significant benefit with convalescent plasma

treatment over placebo for patients with COVID-19 and severe pneumonia.

“We know antibodies work best when given early and in high dose. This is one of the rare reports that validates it in the outpatient setting,” David Sullivan, MD, professor of molecular biology and immunology at Johns Hopkins Bloomberg School of Public Health, Baltimore, said in an interview when asked to comment.

Dr. Sullivan pointed out that most previous studies on convalescent

tibody concentrations for effective treatment are unclear.”

To learn more, Dr. Polack and colleagues included patients with PCR-confirmed COVID-19 who were aged 75 years or older, regardless of comorbidities. They also included patients aged 65-74 years who had at least one underlying condition. Participants were enrolled at clinical sites or geriatric units in Argentina. The mean age was 77 years, and 62% were women.

In an intent-to-treat analysis, the primary outcome – severe respira-

research in the United States regarding the use of plasma for treatment or prevention. He and colleagues are evaluating adults aged 18-90 years, “not just the ones at highest risk for going to the hospital,” he said. Enrollment is ongoing.

An inexpensive therapy with possible global potential

“Although our trial lacked the statistical power to discern long-term outcomes, the convalescent plasma group appeared to have better outcomes than the placebo group with respect to all secondary endpoints,” the researchers wrote. “Our findings underscore the need to return to the classic approach of treating acute viral infections early, and they define IgG targets that facilitate donor selection.”

Dr. Polack said, “This is an inexpensive solution to mitigate the burden of severe illness in the population most vulnerable to the virus: the elderly. And it has the attraction of being applicable not only in industrialized countries but in many areas of the developing world.”

Convalescent plasma “is a potentially inexpensive alternative to monoclonal antibodies,” the researchers added. Furthermore, “early infusions of convalescent plasma can provide a bridge to recovery for at-risk patients until vaccines become widely available.”

Dr. Polack said the study findings did not surprise him. “We always thought that, as it has been the case in the past with many therapeutic strategies against respiratory and other viral infections, the earlier you treat, the better.”

“We just hoped that within 72 hours of symptoms we would be treating early enough – remember that there is a 4- to 5-day incubation period that the virus leverages before the first symptom – and with enough antibody,” he added.

“We are glad it worked,” he said.

The study was supported by the Bill and Melinda Gates Foundation and by the Fundación INFANT Pandemic Fund. Dr. Polack, Dr. Simonovich, and Dr. Sullivan have disclosed various financial relationships with industry.

A version of this article originally appeared on *Medscape.com*.

“The study demonstrates the benefit of early intervention. There was a dose-dependent effect, with higher titers providing a greater benefit.”

plasma focused on patients with COVID-19 who had severe cases late in the disease course.

Regarding the current study, he said, “The striking thing is treating people within 3 days of illness.”

A more cautious interpretation may be warranted, one expert said. “The study demonstrates the benefit of early intervention. There was a dose-dependent effect, with higher titers providing a greater benefit,” Manoj Menon, MD, MPH, a hematologist and oncologist at the University of Washington, Seattle, said in an interview.

“Taken together, the findings have biologic plausibility and produce more data on the role of convalescent plasma to a relevant age cohort,” he added.

However, Dr. Menon said: “Given the limited sample size, I do not think this study, although well conducted, definitively addresses the role of convalescent plasma for COVID-19. But it does merit additional study.”

A search for clear answers

Treatments that target the early stages of COVID-19 “remain elusive. Few strategies provide benefit, several have failed, and others are being evaluated,” the researchers noted. “In hospitalized patients with COVID-19, the infusion of convalescent plasma against SARS-CoV-2 late in the course of illness has not shown clear benefits and, consequently, the most appropriate an-

tory disease – occurred in 16% of the plasma recipients, vs. 31% of the group that received placebo. The relative risk was 0.52 (95% confidence interval, 0.29-0.94; $P = .03$).

The number needed to treat to avoid a severe respiratory disease episode was 7 (95% CI, 4-50).

Life-threatening respiratory disease, a secondary outcome, occurred in 4 people in the plasma group, compared with 10 in the placebo group. Two patients in the treatment group and four patients in the placebo group died.

The researchers also ran a modified intent-to-treat analysis that excluded six participants who experienced severe respiratory disease prior to receiving plasma or placebo. In this analysis, efficacy of plasma therapy increased to 60%.

“Again, this finding suggests that early intervention is critical for efficacy,” the investigators noted.

The investigators, who are based in Argentina, defined their primary endpoint as a respiratory rate of 30 or more breaths per minute and/or an oxygen saturation of less than 93% while breathing ambient air.

Dr. Sullivan pointed out that this is equivalent to the threshold commonly used for hospitalizing people with COVID-19 in the United States. “So it’s equivalent to avoiding hospitalizations. The take-home is high-titer plasma prevents respiratory distress, which equals hospitalization for us.”

Dr. Sullivan is conducting similar

Contact tracing in hospitals falls off as COVID-19 cases rise

By Sheila Mulrooney Eldred

Like most health care workers at his hospital in Lafayette, Ind., Ramesh Adhikari, MD, FHM, occasionally gets an email noting that a patient he saw later tested positive for COVID-19. He's reminded to self-monitor for symptoms. But 10 months into the pandemic, it has become increasingly unlikely for contact-tracing investigations to result in clinicians quarantining.

The very act of working in the hospital, Dr. Adhikari said, means being likely to see COVID-19 every day, whether in a known patient or an asymptomatic person who tests positive later. If hospitalists had to quarantine after every interaction with a COVID-positive person, there wouldn't be anyone left to do their jobs.

"It's really hard to do [contact tracing] in health care workers thoroughly because of the way we work," Dr. Adhikari said. "It's impossible to do it absolutely."

In a recently updated guidance, the Centers for Disease Control and Prevention extended more leeway in contact tracing when community rates of COVID-19 surge, even allowing that contact tracing "may not be possible" in certain situations. And by defining an exposure more narrowly – health care workers are considered "exposed" only if their contact was more than 15 minutes or lacking in some form of PPE – the guidelines suggest that hospitals can rely more on universal PPE and screening protocols, as Dr. Adhikari's hospital does, and less on extensive contact tracing to curtail viral spread.

Accordingly, while contact tracing has gotten more lax, doctors say, universal precautions – including full PPE and screening of symptoms for patients and health care workers – have become more stringent.

It's a shift from the beginning of the pandemic. At first, CDC recommended wearing masks only during aerosol-producing procedures. Exposures were frequently reported and health care workers sent home. With more evidence in favor of stricter PPE requirements, hospitals including the one where Shyam Odeti, MD, FHM, works in Johnson City, Tenn., have adopted a universal precaution strategy – requiring masks everywhere and a gown, face shield, gloves, and N95 to enter a COVID-positive patient's room. Thus, most exposures fall into that low-risk category.

"If I get it and am asymptomatic, I don't think my colleagues would be exposed by any means because of these stringent policies being enforced," said Dr. Odeti, a hospitalist who often wears a surgical mask on top of his N95 all day. "And U.S. health care is not in a state that can afford to quarantine health care workers for 14 days."



Dr. Odeti

Can universal PPE precautions supplant contact tracing?

The extent of contact tracing varies by hospital. Larger university and community hospitals often have infection control and occupational health teams that can do their own contact tracing, while smaller institutions can't always spare staff. And some state health departments get involved with contact tracing of health care workers while others do not.

"I would venture to say that most hospitals are doing something in terms of contact tracing," said Pam Falk, MPH, CIC, a member of the Association

"If I get it and am asymptomatic, I don't think my colleagues would be exposed by any means because of these stringent policies being enforced."

for Professionals in Infection Control and Epidemiology's COVID-19 task force and an infection control consultant. "It kind of depends on their bandwidth."

But there's no longer a norm. Outside of a pandemic, with ample staffing and far fewer instances that need to be investigated, standards for contact tracing are higher, Dr. Falk said: When a patient is found to have an airborne disease such as tuberculosis, measles,

"Basically we're trained to treat every patient as if they had COVID [so] I feel more secure in the hospital than in the community." Masks have become so habitual they're like part of your regular clothing.

mumps, or chickenpox, a hospital's infection prevention team should investigate, confirm the diagnosis and identify everyone who was exposed. The hospital's occupational health team assists in deciding who will likely need prophylactic treatment and if employees should be furloughed. The thoroughness of such measures has always depended on a hospital's bandwidth.

Because PPE seems to be able to contain COVID-19 better than some of the older diseases targeted by contact tracing, universal protections may be a reasonable alternative in current circumstances, doctors said – if PPE is available.

"At the end of the day, universal source control with surgical masks – and ideally eye protection for clinicians as well – should prevent most transmissions," said Aaron Richterman, MD, from the

division of infectious diseases at the Hospital of the University of Pennsylvania, Philadelphia, who coauthored a JAMA commentary on decreased transmission rates in hospitals (2020 Nov 13. doi: 10.1001/jama.2020.21399).

Contact tracing is still useful, though, to identify weaknesses in universal protection measures, he said.

"I don't think it's worth abandoning. It's like a tool in the toolbox. All are imperfect, and none work 100% of the time," Dr. Richterman said, but using all of them can achieve a fairly high measure of safety. Of the tools, universal masking likely works the best, he contends, so it should be the top pick for hospitals without resources to use all of the tools.

A recent incident at Brigham and Women's Hospital in Boston is a case study in how contact tracing can work together with universal protections to identify cracks in the system, said Dr. Richterman, who worked at the hospital earlier in the pandemic.

Mass General Brigham adopted a universal masking policy for staff and patients in March 2020. Then, when the system experienced an outbreak in September, the hospital did "a very detailed public evaluation that included contact tracing and universal testing," Dr. Richterman said. Testing even included genetic analysis of the virus to confirm which cases were hospital acquired. In the end, the hospital identified weaknesses in infection control that could be rectified, such as clinicians eating too close together.

"The approach is not to point fingers, but to say: 'What's wrong with the system and how do we improve?'" Dr. Richterman said. "To ask, why did that maskless transmission happen? Is there not enough space to eat? Are people working too many hours? It's useful for systems to understand where transmissions are happening."



Dr. Skandhan

Amith Skandhan, MD, SFHM, a hospitalist in Dothan, Ala., is comfortable without much contact tracing as long as there is universal PPE use. His hospital informs clinicians of exposures, but "basically we're trained to treat every patient as if they had COVID," he said, so "I feel more secure in the hospital than in the community." Masks have become so habitual they're like part of your regular clothing, he said – you feel incomplete if you don't have one.

While ad hoc approaches to contact tracing may be useful in the current stage of the pandemic, they are likely to be short lived: Once a community's positivity rate falls, the CDC's guidance suggests how hospitals can return to full contact tracing.

A version of this article originally appeared on [Medscape.com](https://www.medscape.com).

Complete blood count scoring can predict COVID-19 severity

By Damian McNamara

A scoring system based on 10 parameters in a complete blood count with differential within 3 days of hospital presentation predict those with COVID-19 who are most likely to progress to critical illness, new evidence shows.

Advantages include prognosis based on a common and inexpensive clinical measure, as well as automatic generation of the score along with CBC results, noted investigators in the observational study conducted throughout 11 European hospitals.

“COVID-19 comes along with specific alterations in circulating blood cells that can be detected by a routine hematology analyzer, especially when that hematology analyzer is also capable to recognize activated immune cells and early circulating blood cells, such as erythroblast and immature granulocytes,” senior author Andre van der Ven, MD, PhD, infectious diseases specialist and professor

of international health at Radboud University Medical Center's Center for Infectious Diseases in Nijmegen, the Netherlands, said in an interview.

Furthermore, Dr. van der Ven said, “these specific changes are also seen in the early course of COVID-19 disease, and more in those that will develop serious disease compared to those with mild disease.”

The study was published online Dec. 21, 2020, in the journal *eLife* (doi: 10.7554/eLife.63195).

The study is “almost instinctively correct. It’s basically what clinicians do informally with complete blood count ... looking at a combination of results to get the gestalt of what patients are going through,” Samuel Reichberg, MD, PhD, associate medical director of the Northwell Health Core Laboratory in Lake Success, N.Y., said in an interview.

“This is something that begs to be done for COVID-19. I’m surprised no one has done this before,” he added.

Dr. Van der Ven and colleagues created an algorithm based on 1,587 CBC



CDC/AMANDA MILLS

“COVID-19 comes along with specific alterations in circulating blood cells that can be detected by a routine hematology analyzer.”

assays from 923 adults. They also validated the scoring system in a second cohort of 217 CBC measurements in 202 people. The findings were concordant – the score accurately predicted the need for critical care within 14 days in 70.5% of the development cohort and 72% of the validation group.

The scoring system was superior to any of the 10 parameters alone. Over 14 days, the majority of those classified as noncritical within the first 3 days remained clinically stable, whereas the “clinical illness” group progressed. Clinical severity peaked on day 6.

Most previous COVID-19 prognosis research was geographically limited, carried a high risk for bias and/or did not validate the findings, Dr. Van der Ven and colleagues noted.

Early identification, early intervention

The aim of the score is “to assist with objective risk stratification to support patient management decision-making early on, and thus facilitate timely interventions, such as need for ICU or not, before symptoms of severe illness become clinically overt, with the intention to improve patient outcomes, and not to predict mortality,” the investigators noted.

Dr. Van der Ven and colleagues developed the score based on adults presenting from Feb. 21 to April 6, 2020, with outcomes followed until June 9. Median age of the 982 patients was 71 years and approximately two-thirds were men. They used a Sysmex Europe XN-1000 (Hamburg,

Germany) hemocytometric analyzer in the study.

Only 7% of this cohort was not admitted to a hospital. Another 74% were admitted to a general ward and the remaining 19% were transferred directly to the ICU.

The scoring system includes parameters for neutrophils, monocytes, red blood cells and immature granulocytes, and when available, reticulocyte and iron bioavailability measures.

The researchers report significant differences over time in the neutrophil-to-lymphocyte ratio between the critical illness and noncritical groups ($P < .001$), for example. They also found significant differences in hemoglobin levels between cohorts after day 5.

The system generates a score from 0 to 28. Sensitivity for correctly predicting the need for critical care increased from 62% on day 1 to 93% on day 6.

A more objective assessment of risk

The study demonstrated that SARS-CoV-2 infection is characterized by hemocytometric changes over time. These changes, reflected together in the prognostic score, could aid in the early identification of patients whose clinical course is more likely to deteriorate over time.

The findings also support other work that shows men are more likely to present to the hospital with COVID-19, and that older age and presence of comorbidities add to overall risk. “However,” the research-

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Scant risk for SARS-CoV-2 from hospital air

Viable viruses typically are found only close to patients

By Laird Harrison

Everywhere they look within hospitals, researchers find RNA from SARS-CoV-2 in the air. But viable viruses typically are found only close to patients, according to a review of published studies.

The finding supports recommendations to use surgical masks in most parts of the hospital, reserving respirators (such as N95 or FFP2) for aerosol-generating procedures on patients' respiratory tracts, said Gabriel Birgand, PhD, an infectious disease researcher at Imperial College London.

"When the virus is spreading a lot in the community, it's probably more likely for you to be contaminated in your friends' areas or in your building than in your work area, where you are well equipped and compliant with all the measures," he said in an interview. "So it's pretty good news."

The systematic review by Dr. Birgand and colleagues was published in *JAMA Network Open* (2020 Dec 23. doi: 10.1001/jamanetworkopen.2020.33232).

Recommended precautions to protect health care workers from SARS-CoV-2 infections remain controversial. Most authorities believe droplets are the primary route of transmission, which would mean surgical masks may be sufficient protection. But some research has suggested transmission by aerosols as well, making N95 respirators seem necessary. There is even disagreement about the definitions of the words "aerosol" and "droplet."

To better understand where traces of the virus can be found in the air in hospitals, Dr. Birgand and colleagues analyzed all the studies they could find on the subject in English.

They identified 24 articles with original data. All of the studies used reverse transcription-polymerase chain reaction (PCR) tests to identify SARS-CoV-2 RNA. In five studies, attempts were also made to culture viable viruses. Three studies assessed the particle size relative to RNA concentration or viral titer.

Of 893 air samples across the 24 studies, 52.7% were taken from areas close to patients, 26.5% were taken in clinical areas, 13.7% in staff areas, 4.7% in public areas, and 2.4% in toilets or bathrooms.

Among those studies that quantified RNA, the



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median interquartile range of concentrations varied from 1.0×10^3 copies/m³ in clinical areas to 9.7×10^3 copies/m³ in toilets or bathrooms.

One study found an RNA concentration of 2.0×10^3 copies for particle sizes >4 mcm and 1.3×10^3 copies/m³ for particle sizes ≤ 4 mcm, both in patients' rooms.

Three studies included viral cultures; of those, two resulted in positive cultures, both in a non-ICU setting. In one study, 3 of 39 samples were positive, and in the other, 4 of 4 were positive. Viral cultures in toilets, clinical areas, staff areas, and public areas were negative.

One of these studies assessed viral concentration and found that the median interquartile range was 4.8 tissue culture infectious dose (TCID₅₀)/m³ for particles <1 mcm, 4.27 TCID₅₀/m³ for particles 1-4 mcm, and 1.82 TCID₅₀/m³ for particles >4 mcm.

Although viable viruses weren't found in staff areas, the presence of viral RNA in places such as dining rooms and meeting rooms raises a concern, Dr. Birgand said.

"All of these staff areas are probably playing an important role in contamination," he said. "It's pretty easy to see when you are dining, you are not wearing a face mask, and it's associated with a strong risk when there is a strong dissemination of the virus in the community."

Studies on contact tracing among health care workers have also identified meeting rooms and dining rooms as the second most common source of infection after community contact, he said.



Dr. Rasmussen

In general, the findings of the review correspond to epidemiologic studies, said Angela Rasmussen, PhD, a virologist with the Georgetown University Center for Global Health Science and Security, Washington, who was not involved in the review. "Absent aerosol-generating procedures, health care workers are largely not getting infected when they take droplet precautions."

One reason may be that patients shed the most infectious viruses a couple of days before and after symptoms begin. By the time they're hospitalized, they're less likely to be contagious but may continue to shed viral RNA.

"We don't really know the basis for the persistence of RNA being produced long after people have been infected and have recovered from the acute infection," she said, "but it has been observed quite frequently."

Although the virus cannot remain viable for very long in the air, remnants may still be detected in the form of RNA, Dr. Rasmussen said. In addition, hospitals often do a good job of ventilation.

She pointed out that it can be difficult to cultivate viruses in air samples because of contaminants such as bacteria and fungi. "That's one of the limitations of a study like this. You're not really sure if it's because there's no viable virus there

"We don't really know the basis for the persistence of RNA being produced long after people have been infected and have recovered from the acute infection, but it has been observed quite frequently."

or because you just aren't able to collect samples that would allow you to determine that."

Dr. Birgand and colleagues acknowledged other limitations. The studies they reviewed used different approaches to sampling. Different procedures may have been underway in the rooms being sampled, and factors such as temperature and humidity could have affected the results. In addition, the studies used different cycle thresholds for PCR positivity.

A version of this article originally appeared on Medscape.com.

Continued from previous page

ers noted, "not all young patients had a mild course, and not all old patients with comorbidities were critical."

Therefore, the prognostic score can help identify patients at risk for severe progression outside other risk factors and "support individualized treatment decisions with objective data," they added.

Dr. Reichberg called the concept of

combining CBC parameters into one score "very valuable." However, he added that incorporating an index into clinical practice "has historically been tricky."

The results "probably have to be replicated," Dr. Reichberg said.

He added that it is likely a CBC-based score will be combined with other measures. "I would like to see an index that combines all the tests

we do [for COVID-19], including complete blood count."

Dr. Van der Ven shared the next step in his research. "The algorithm should be installed on the hematology analyzers so the prognostic score will be automatically generated if a full blood count is asked for in a COVID-19 patient," he said. "So implementation of score is the main focus now."

Dr. van der Ven disclosed an ad hoc consultancy agreement with Sysmex Europe. Sysmex Europe provided the reagents in the study free of charge; no other funders were involved. Dr. Reichberg has disclosed no relevant financial relationships.

A version of this article originally appeared on Medscape.com.

The Blitz and COVID-19

Lessons from history for hospitalists

By Leonidas Walthall, MD

The Blitz was a Nazi bombing campaign targeting London. It was designed to break the spirit of the British.

Knowing London would be the centerpiece of the campaign, the British rather hastily established several psychiatric hospitals for the expected panic in the streets. However, despite 9 months of bombing, 43,000 civilians killed and 139,000 more wounded, the predicted chaos in the streets did not manifest. Civilians continued to work, industry continued to churn, and eventually, Hitler's eye turned east toward Russia.

The surprising lack of pandemonium in London inspired Dr. John T. MacCurdy, who chronicled his findings in a book *The Structure of Morale*, more recently popularized in Malcolm Gladwell's *David and Goliath*. A brief summary of Dr. MacCurdy's theory divides the targeted Londoners into the following categories:

- Direct hit
- Near miss
- Remote miss

The direct hit group was defined as those killed by the bombing. However, As Dr. MacCurdy stated, "The morale of the community depends on the reaction of the survivors. ... Put this way, the fact is obvious, corpses do not run about spreading panic."

A near miss were those for whom wounds were inflicted or loved ones were killed. This group felt the real repercussions of the bombing. However, with 139,000 wounded out of a

city of 8 million people, they were a small minority.

The majority of Londoners, then, fit into the third group – the remote miss. These people faced a serious fear, but survived, often totally unscathed. The process of facing that fear without having panicked or having been harmed, then, led to "a feeling of excitement with a flavour of invulnerability."

Rather than a city of millions running in fear in the streets, London became a city of people who felt themselves, perhaps, invincible.

A similar threat passed through the world in the first several months of the COVID-19 pandemic. Hospitals were expected to be overrun, and ethics committees convened to discuss allocation of scarce ventilators. However, at least in part because of the impressive efforts of the populace of the United States, the majority of civilians did not feel the burden of this frightening disease. Certainly, in a few places, hospitals were overwhelmed, and resources were unavailable because of sheer numbers. These places saw those who suffered direct hits with the highest frequency. However, a disease with an infection fatality ratio recently estimated at 0.5-1%, with a relatively high rate of asymptomatic disease, led to a large majority of people who experienced the first wave of COVID-19 in the United States as a remote miss. COVID-19's flattened first peak gave much of the population a sense of relief, and, perhaps, a "flavour of invulnerability."

An anonymous household contact wrote The New York Times and il-

lustrated perfectly the invulnerable feelings of a remote miss:

"I'm doing my best to avoid social contact, along with two other members of my household. We have sufficient supplies for a month. Despite that, one member insists on going out for trivial reasons, such as not liking the kind of apples we have. He's 92. I've tried explaining and cajoling, using graphs and anecdotes to make the danger to all of us seem 'real.' It doesn't take. His risk of death is many times greater than mine, and he's poking holes in a lifeboat we all have to rely on. What is the correct path?"

American culture expects certainty from science. Therein lies the problem with a new disease no medical provider or researcher had seen prior to November 2019. Action was required in the effort to slow the spread with few to no data as a guide. Therefore, messages that seemed contradictory reached the public. "A mask less than N-95 grade will not protect you," evolved to, "everyone should wear a homemade cloth mask." As the pandemic evolved and data were gathered, new recommendations were presented. Unfortunately, such well-meaning and necessary changes led to confusion, mistrust, and conspiracy theories.

Psychologists have weighed in regarding other aspects of our culture that allow for the flourishing of misinformation. A photograph even loosely related to the information presented has been shown to increase the initial sense of trustworthiness. Simple repetition can also make a point seem more trustworthy. As social media pushes the daily deluge of information (with pictures!) to new heights, it is a small wonder misinformation remains in circulation.

Medicine's response

The science of COVID-19 carries phenomenal uncertainties, but the psychology of those who have suffered direct hits or near misses are the daily bedside challenge of all physicians, but particularly of hospitalists. We live at the front lines of disease – as one colleague put it to me, "we are the watchers on the wall." Though we do not yet have our hoped-for, evidence-based treatment for this virus, we are familiar with acute illness. We know the rapid change of health to disease,



Dr. Walthall completed his internal medicine residency at the Medical University of South Carolina in Charleston. After residency, he joined the faculty at MUSC in the Division of Hospital Medicine. He is also interested in systems-based care and has taken on the role of physician adviser.

and we know the chronically ill who suffer exacerbations of such illness. Supporting patients and their loved ones through those times is our daily practice.

On the other hand, those who have experienced only remote misses remain vulnerable in this pandemic, despite their feelings of invincibility. Those that feel invincible may be the least interested in our advice. This, too, is no strange position for a physician. We have tools to reach patients who do not reach out to us. Traditional media outlets have been saturated with headlines and talking points about this disease. Physicians who have taken to social media have been met with appreciation in some situations, but ignored, doubted, or shunned in others. In May 2020, NBC News reported an ED doctor's attempt to dispel some COVID myths on social media. Unfortunately, his remarks were summarily dismissed. Through the frustration, we persevere.

Of the many responsible authorities who help battle misinformation, the World Health Organization's mythbusting website (www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters) confronts many incorrect ideas. My personal favorite at the time of this writing is: "Being able to hold your breath for 10 sec-

Continued on following page



The aftermath of a German bombing raid on London during the Blitz.

Need help ruling out suspected HIT?

Consider using the 4T score, researchers say

By M. Alexander Otto

The real strength of the 4T score for heparin-induced thrombocytopenia (HIT) is its negative predictive value, according to hematologist Adam Cuker, MD, of the department of medicine at the University of Pennsylvania, Philadelphia.

The score assigns patients points based on degree of thrombocytopenia, timing of platelet count fall in relation to heparin exposure, presence of thrombosis and other sequelae, and the likelihood of other causes of thrombocytopenia.

A low score – 3 points or less – has a negative predictive value of 99.8%, “so HIT is basically ruled out; you do not need to order lab testing for HIT or manage the patient empirically for HIT,” and should look for other causes of thrombocytopenia, said Dr. Cuker, lead author of the American Society of Hematology’s most recent HIT guidelines.

Intermediate scores of 4 or 5 points, and high scores of 6-8 points, are a different story. The positive predictive value of an intermediate score is only 14%, and of a high score, 64%, so although they don’t confirm the diagnosis, “you have to take the possibility of HIT seriously.” Discontinue heparin, start a nonheparin anticoagulant, and order a HIT immunoassay. If it’s positive, order a functional assay to confirm the diagnosis, he said.

Suspicion of HIT “is perhaps the most common consult that we get on the hematology service. These are tough consults because it is a high-stakes decision.” There is about a 6% risk of thromboembolism, amputation, and death for every day treatment is delayed. “On the other hand, the nonheparin anticoagulants are expensive, and they carry about a 1% daily risk of

ELISA immunoassay detects antiplatelet factor 4 heparin antibodies but doesn’t tell whether or not they are able to activate platelets and cause HIT.

major bleeding,” Dr. Cuker explained during his presentation at the 2020 Update in Nonneoplastic Hematology virtual conference.

ELISA immunoassay detects antiplatelet factor 4 heparin antibodies but doesn’t tell whether or not they are able to activate platelets and cause HIT. Functional tests such as the serotonin-release assay detect only those antibodies able to do so, but the assays are difficult to perform, and often require samples to be sent out to a reference lab.

ASH did not specify a particular nonheparin anticoagulant in its 2018 guidelines because “the

best choice for your patient” depends on which drugs you have available, your familiarity with them, and patient factors, Dr. Cuker said at the conference sponsored by MedscapeLive.

It makes sense, for instance, to use a short-acting agent such as argatroban or bivalirudin in patients who are critically ill, at high risk of bleeding, or likely to need an urgent unplanned procedure. Fondaparinux or direct oral anticoagulants (DOACs) make sense if patients are clinically stable with good organ function and no more than average bleeding risk, because they are easier to administer and facilitate transition to the outpatient setting.

DOACs are newcomers to ASH’s guidelines. Just 81 patients had been reported in the literature when they were being drafted, but only 2 patients had recurrence or progression of thromboembolic events, and there were no major bleeds. The results compared favorably with other options.

The studies were subject to selection and reporting biases, “but, nonetheless, the panel felt the results were positive enough that DOACs ought to be listed as an option,” Dr. Cuker said.

The guidelines note that parenteral options may be the best choice for life- or limb-threatening thrombosis “because few such patients have been treated with a DOAC.” Anticoagulation must continue until platelet counts recover.

Continued from previous page

onds or more without coughing or feeling discomfort DOES NOT mean you are free from COVID-19.”

For the policy and communication side of medicine in the midst of this pandemic, I will not claim to have a silver bullet. There are many intelligent, policy-minded people who are working on that very problem. However, I can see two powerful tools that may help us move forward.

1) Confidence and humility: We live in a world of uncertainty, and we struggle against that every day. This pandemic has put our uncertainty clearly on display. However, we may also be confident in providing the best currently known care, even while holding the humility that what we know will likely change. When I am willing to admit my uncertainty, I have witnessed patients’ skepticism transform into assuming an active role in their care.

For those who have suffered a direct hit or a near miss, honest conversations are vital to build a trusting physician-patient relationship. For the remote miss group, speaking candidly about our uncertainty displays our authenticity and helps combat conspiracy-type theories of ulterior motives. This becomes all

the more crucial when new technologies are being deployed – for instance, a September 2020 CBS News survey showed only 21% of Americans planned to get a COVID-19 vaccine “as soon as possible.”

2) Insight into our driving emotions: While the near miss patients are likely ready to continue prevention measures, the remote miss group is often more difficult. When we do have the opportunity to discuss actions to impede the virus’s spread with the remote miss group, understanding their potentially unrecognized motivations helps with that conversation. I have shared the story of the Blitz and the remote miss and seen people connect the dots. Effective counseling – expecting the feelings of invulnerability amongst the remote miss group – can support endurance with prevention measures amongst that group and help flatten the curve.

Communicating our strengths, transparently discussing our weaknesses, and better understanding underlying emotions for ourselves and our patients may help save lives. As physicians, that is our daily practice, unchanged even as medicine takes center stage in our national conversation.



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Finding a new approach to difficult diagnoses

Reducing – or managing – uncertainty

Beyond its clinical objective, the Socrates Project also seeks to further the discovery of previously unrecognized disease processes

Many patients do not have a diagnosis that explains their signs and symptoms, despite a thorough evaluation, said Benjamin Singer, MD, assistant professor of pulmonology and critical care at Northwestern Medicine in Chicago. To address that problem, he and his colleagues launched the Socrates Project. The service is intended for difficult diagnoses and is based on Socratic principles, particularly the role of iterative hypothesis testing in the process of diagnosis.

“We began the Socrates Project to assist physicians caring for patients who lack a specific diagnosis. In creating this service, we have found ourselves to be doctors for doctors – formalizing the curbside consultation,” Dr. Singer said.

Northwestern Medicine launched the Socrates Project in 2015. It’s a physician-to-physician consultation service that assists doctors working to diagnose conditions that have so far eluded detection. “Our service’s goal is to improve patient care by providing an opinion to the referring physician on diagnostic possibilities for a particular case and ideas to reduce – or at least manage –



Dr. Benjamin Singer discusses strategies for inpatient diagnosis with Northwestern Medicine staff.

diagnostic uncertainty,” they write. “Our service model is similar to a tumor board, which exists as an interdisciplinary group operating in parallel to the clinical services, to provide consensus-based recommendations.”

Hospitalists at other institutions may be interested in starting a similar type of service at their own institution or collaborating with institutions who offer this type of service, Dr. Singer said.

At Northwestern Medicine, they are at work on the project’s next steps. “We are working to generate systematic data about our practice, particularly the types of referrals and outcomes,” he said.

Reference

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Accessing data during EHR downtime

Minimizing loss of efficiency

Electronic health record (EHR) implementations involve long downtimes, which are an under-recognized patient safety risk, as clinicians are forced to switch to completely manual, paper-based, and important unfamiliar workflows to care for their acutely ill patients, said Subha Airan-Javia, MD, FAMIA, a hospitalist at the University of Pennsylvania, Philadelphia.

“In this setting, we discovered an

unanticipated benefit of our tool [Carelign, initially built to digitize the handoff process] as a clinical resource during EHR downtime, giving clinicians access to critical data as well as an electronic platform to collaborate as a team around the care of their patients,” she said.

There are two important takeaways from their study on this issue. “The first is that Carelign was able to give clinicians access to

clinical data that would otherwise have been unavailable, including vitals, labs, medications, care plans, and care team assignments,” Dr. Airan-Javia said. “This undoubtedly mitigated patient safety risks during the EHR downtime.”

The second: “As many clinicians know, any change in workflow, even for a few hours, can make providing a high level of patient care very difficult,” she added. “During a downtime without a tool like Carelign, clinicians have to rely on paper and bedside charts, writing notes on paper and then re-typing them into the EHR when it is back up. This adds to the already excessive amount of administrative work that is burning clinicians out.” Using a tool like Carelign means no such loss in efficiency.

“A tool like Carelign, particularly because it is something that can be used without having to integrate it with the EHR, can put some control

back into a hospitalist’s hands, to have a say in their workflow,” Dr. Airan-Javia said. “In a world where EHRs are designed to optimize bill-

“We discovered an unanticipated benefit of our tool as a clinical resource during EHR downtime.”



Dr. Airan-Javia

ing, it can be game-changer to have a tool like Carelign that was created by a practicing clinician, for clinicians. Anyone interested in this area is welcome to reach out to me at subhaairan@gmail.com for collaboration or more information.”

Reference

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BEN BLANKENBURG/THINKSTOCK

Calling for more health care trials

Innovation requires experimentation

Successful innovation requires experimentation, according to a recent editorial in *BMJ Quality & Safety* – that’s why health systems should engage in more experimenting, more systematically, to improve health care.

“Most health systems implement interventions without testing them against other designs,” said co-author Mitesh S. Patel, MD, MBA, MS, of the University of Pennsylvania, Philadelphia. “This means that good ideas are often not spread (because we don’t know how impactful they are) and bad ones persist (because we don’t realize they don’t work).”

Dr. Patel, who is director of the Penn Medicine Nudge Unit at the Perelman Center for Advanced Medicine, encourages health systems

and clinicians to implement new interventions in testable ways such as through a randomized trial, so that we can learn what works and why. A more systematic approach could help to expand programs that work and improve workflow and patient care.

“First, we must embed research teams within health systems in order to create the capacity for this kind of work. Expertise is required to identify a promising intervention, design the conceptual approach, conduct the technical implementation and rigorously evaluate the trial. These teams are also able to design interventions within



Dr. Patel

the context of existing workflows in order to ensure that successful projects can be quickly scaled and that ineffective initiatives can be

“The field of health care is ripe with detailed and reliable administrative data and electronic medical record data.”

seamlessly terminated.” the authors wrote.

“Second, we must take advantage of existing data systems. The field of health care is ripe with detailed and reliable administrative data and electronic medical record data. These data offer the potential to do

high-quality, low-cost, rapid trials. Third, we must measure a wide range of meaningful outcomes. We should examine the effect of interventions on health care costs, health care utilization and health outcomes.”

Next steps could be focused on thinking about the key priority areas and how can experiments be used to generate new knowledge on what works and what does not. “Luckily, the complex world of health care provides endless opportunities for rapid-cycle, randomized trials that target health care costs and outcomes,” Dr. Patel said.

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Seeking the next generation of antibiotics

Crispr drugs can be effective

Globally, some 700,000 people die from antibiotic-resistant infections every year; by 2050, that number could be 10 million, according to the United Nations. To find new ways to fight pathogenic microorganisms, scientists are looking to Crispr, the gene-editing tool, according to the *New York Times*.

“Crispr is a specialized region of DNA that creates what amount to genetic scissors – enzymes that allow the cell (or a scientist) to precisely edit other DNA or its sister molecule, RNA. ... Crispr was originally discovered in bacteria, where it helps keep track of past injury. When a virus attacks, the bacterium stores small chunks of the viral genome within its own DNA. This helps the bacterium recognize viral infections when they occur again. Then, using Crispr-associated enzymes, it can disarm the virus and prevent the infection from spreading. ... Today researchers are looking to Crispr to edit bacteria and viruses that infect humans and create new treatments.”

In a recent study, researchers successfully used a Crispr-associated enzyme called Cas9 to eliminate a species of *Salmonella*. They programmed the Cas9 to view the bacterium as the enemy and forced *Salmonella* to make lethal cuts to its own genome.

Some companies are now exploring Crispr-based antibiotics that might be delivered

through viruses engineered so that they cannot reproduce or cause infections themselves, to name just one approach.

“Now researchers face the challenge of



demonstrating that Crispr antibacterial and antiviral drugs are effective in living animals and in humans, not just in the lab, and that they will be cheaper than conventional therapies.”

Reference

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CIPHOTOS/GETTY IMAGES

Quick byte: Curing diabetes

Harvard biologist Doug Melton, PhD, is exploring the use of stem cells to create replacement beta cells that produce insulin, according to *Time* magazine.

In 2014, he co-founded Semma Therapeutics to develop the technology, which was acquired by Vertex Pharmaceuticals.

“The company has created a small, implantable device that holds millions of replacement beta cells, letting glucose and insulin through but keeping immune cells out. If it works in people as well as it does in animals, it’s possible that people will not be diabetic, said Dr. Melton, codirector of the Harvard Stem Cell Institute and an investigator of the Howard Hughes Medical Institute. “They will eat and drink and play like those of us who are not.”

Reference

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Practice Management

The journey from burnout to well-being

A check-in for you and your peers

By Dea Robinson, PhD, MA, FACMPE

C OVID-19 did not discriminate when it came to the impact it imposed on our hospitalist community. As the nomenclature moves away from the negative connotations of “burn-out” to “well-being,” the pandemic has taught us something important about being intentional about our personal health: We must secure our own oxygen masks before helping others.

In February 2020, the Society of Hospital Medicine’s Wellbeing Taskforce efforts quickly changed focus from addressing general well-being, to well-being during COVID-19. Our Taskforce was commissioned by SHM’s Board with a new charge: Address immediate and ongoing needs of well-being and resiliency support for hospitalists during the COVID-19 pandemic. In this essay, I will discuss how our SHM Wellbeing Taskforce approached the overall topic of well-being for hospitalists during the COVID-19 pandemic, including some of our Taskforce group experiences.

The Taskforce started with a framework to aide in cultivating open and authentic conversations within hospital medicine groups. Creating spaces for honest sharing around how providers are doing is a crucial first step to reducing stigma, building mutual support within a group, and elevating issues of well-being to the level where structural change can take place. The Taskforce established two objectives for normalizing and mitigating stressors we face as hospitalists during the COVID-19 pandemic:

- Provide a framework for hospitalists to take their own emotional pulse
- Provide an approach to reduce stigma of hospitalists who are suffering from pandemic stress

While a more typical approach to fix stress and burnout is using formal institutional interventions, we used the value and insight provided by SHM’s 7 Drivers of Burnout in Hospital Medicine to help guide the creation of SHM resources in addressing the severe emotional strain being felt across the country by hospitalists. The 7 Drivers support the

idea that the social role peers and hospital leaders can make a crucial difference in mitigating stress and burnout. Two examples of social support come to mind from the Wellbeing Taskforce experience:

- **Participate in your meetings.** One example comes from a member of our group who had underestimated the “healing power” that our group meetings had provided to his psyche. The simple act of participating in our Taskforce meeting and being in the presence

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of our group had provided such a positive impact that he was better able to face the “death and misery” in his unit with a smile on his face.

- **Share what is stressful.** The second example of social support comes from an hour of Zoom-based facilitation meetings between the SHM’s Wellbeing Taskforce members and Chapter Leaders. During our Taskforce debrief after the meeting, we came to realize the enormous burden of grief our peers were carrying as one hospitalist had lost a group colleague the previous week to suicide. Our member who led this meeting was moved – as were we – at how this had impacted his small team, and he was reminded he was not alone.

To form meaningful relationships that foster support, there needs to be a space where people can safely come together at times that initially might feel awkward. After taking steps toward your peers, these conversations can become normalized and contribute to meaningful relationships, providing the opportunity for healthy exchanges on vulnerable topics like emotional and psychological well-being. A printable guide for this specific purpose (“HM COVID-19 Check-In Guide for Self and Peers”) was designed to help hospitalists move into safe and supportive conversations with each other. While

it is difficult to place a value on the importance these types of conversations have on individual well-being, it is known that the quality of a positive work environment where people feel supported can moderate stress, morale, and depression. In other words, hospitalist groups can positively contribute to their social environment during stressful times by sharing meaningful and difficult experiences with one another.

Second, the Taskforce created a social media campaign to provide a public social space for sharing hospitalists’ COVID-19 experiences. We believed that sharing collective experiences with the theme of #YouAreNotAlone and a complementary social media campaign, SHM Cares, on SHM’s social media channels, would further connect the national hospitalist community and provide a different communication pathway to decrease a sense of isolation. This idea came from the second social support idea mentioned earlier to share what is stressful with others in a safe space. We understood that some hospitalists would be more comfortable sharing publicly their comments, photos, and videos in achieving a sense of hospitalist unity.

Using our shared experiences, we identified three pillars for the final structure of the HM COVID-19 Check-In Guide for Self and Peers:

- **Pillar 1. Recognize your issues.** Recall our oxygen mask metaphor and this is what we mean by recognizing symptoms of new stressors (e.g., sleeplessness, irritability, forgetfulness).
 - **Pillar 2. Know what to say.** A simple open-ended question about how the other person is working through the pandemic is an easy way to start a connection. We learned from a mental health perspective that it is unlikely that you could say anything to make a situation worse by offering a listening ear.
 - **Pillar 3. Check in with others.** Listen to others without trying to fix the person or the situation. When appropriate, offer humorous reflections without diminishing the problem. Be a partner and commit to check in regularly with the other person.
- Cultivating human connections



Dr. Robinson received her PhD in organizational learning, performance, and change from Colorado State University in 2019. Her dissertation topic was exploring hospitalist burnout, engagement, and social support. She has been in hospitalist administration for over 16 years and teaches health care management at Metropolitan State University, Denver. She has volunteered in numerous SHM committees, and currently serves on the SHM Wellbeing Taskforce.

outside of your immediate peer group can be valuable and offer additional perspective to stressful situations. For instance, one of my roles as a hospitalist administrator has been offering support by regularly listening as my physicians “talk out” their day confidentially for as long as they needed. Offering open conversation in a safe and confidential way can have a healing effect.

The HM COVID-19 Check-In Guide for Self and Peers and the SHM Cares social media campaign was the result of the Taskforce’s collective observations to help others normalize the feeling that “it’s OK not to be OK.” Using the pandemic as context, the 7 Drivers of Hospitalist Burnout reminded us that the increased burnout issues we face will require continued attention past the pandemic. The value in cultivating human connections has never been more important. The SHM Wellbeing Taskforce is committed to provide continued resources. Checking in with others and listening to peers are all part of a personal well-being and resilience strategy.

To access the full Check-In Guide, visit www.hospitalmedicine.org/wellbeing.

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