

# THE Hospitalist<sup>®</sup>

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## Rural hospitalists confront COVID-19

Unique demands of patient care in small hospitals

By Larry Beresford

In 2018, Atashi Mandal, MD, a hospitalist residing in Orange County, Calif., was recruited along with several other doctors to fill hospitalist positions in rural Bishop, Calif. She has since driven 600 miles round trip every month for a week of hospital medicine shifts at Northern Inyo Hospital.

Dr. Mandal said she has really enjoyed her time at the small rural hospital and found it professionally fulfilling to participate so fully in the health of its local community. She was building personal bonds and calling the experience the pinnacle of her career when the COVID-19 pandemic swept across America and the world, even reaching into Bishop, population 3,760, in the isolated Owens Valley.

The 25-bed hospital has seen at least 100 COVID patients in the past year and some months. Responsibility for taking care of these patients has been both humbling and gratifying, Dr. Mandal said. The facility's hospitalists made a commitment to keep working through the pandemic. "We were able to come together (around COVID) as a team and our teamwork really made a difference," she said.

"One of the advantages in a smaller hospital is you can have greater cohesiveness and your communication can be tighter. That played a big role in how we were able to accomplish so much with fewer resources as a rural hospital." But staffing shortages, recruitment, and retention remain a perennial challenge for rural hospitals.

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Dr. Lisa Kaufmann is a hospitalist at Appalachian Regional Healthcare System, Boone, N.C.

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## Hospitalist Insight

# Why this round of COVID-19 feels worse

By Ilaria Gadalla, DMSc, PA-C

**E**xhaustion. Defeat. Hopelessness. Physicians, nurses, physician assistants, and nurse practitioners are overwhelmed with burnout.

The recent round of COVID-19 is more frustrating than the first, with scientific evidence supporting ways we can prevent disease and disease progression (Lancet. 2020 Jun 27;395[10242]:1973-87). The health care team is no longer viewed as heroes but as the enemy, fraudulently proposing a vaccine and painting a fictional story of death, though it's all true. The daily educational battle with patients and family members creates a challenging environment that cultivates hopelessness.

Clinicians are physically exhausted from the numerous COVID cases. Gone are the medical patients we trained for, who either remain home and risk their health or lack access to medical providers because of excessive wait times. Empathy for COVID patients is being tested even more with this new surge, and without the two-way bond of trust, clinicians are running out of fuel.

Anger and distrust regarding vaccination guidance dominate the interaction when patients present demanding urgent intervention, while clinicians know that more than 95% of hospitalized patients are unvaccinated (Morb Mortal Wkly Rep. 2021;70:1150-5).

The struggle to find the commitment to medicine and serving patients is made worse by the pandemic fog and loss of trust from patients. Every day, health care teams risk their personal well-being to provide medical care and intervention. Not by choice do we gown up, mask up, and glove up. Each time we enter a COVID patient's room, we expose ourselves and risk our own lives and the lives of our families for the patients who have elected to ignore medical guidance.

This national wave of resistance to vaccination is spurring an exodus from health care. Physicians are retiring early and physician assistants and nurse practitioners are seeking non-patient-facing positions to improve their own wellness and



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balance. A national nursing shortage is impacting patients seeking care in every medical discipline. The underlying wave of exhaustion and frustration has not completely destroyed their empathy but has depleted their drive.

How can we regain this drive amid exhausting work hours and angry patients?

As much as we have heard it, we need to protect our time to recharge. The demand to pick up extra shifts and support our colleagues has affected our personal health. Setting boundaries and building time for exercise, meditation, and connecting with family is essential for survival. Mental health is key to retaining empathy and finding hope.

Education is one path to reigniting the fires of critical thinking and commitment to patient care – consider precepting students to support the growth of health care teams. Memories of patient care before this pandemic give us the hope that there is light at the end of this tunnel.

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## In the Literature

## Clinician reviews of HM-centric research

By Amit B. Bansal, MD, MBA, SFHM; Malachi Courtney, MD;  
Bradley Flansbaum, DO, MHM; Tareq Islam, MD, MPH

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By Amit B. Bansal, MD, MBA, SFHM

### 1 Albumin infusions do not benefit hospitalized patients with cirrhosis

**CLINICAL QUESTION:** Do albumin infusions help reduce infection, kidney dysfunction, or death in patients hospitalized with liver cirrhosis?

**BACKGROUND:** Patients with decompensated cirrhosis are highly susceptible to infection, causing renal failure and death. Albumin is recommended for patients with large-volume paracentesis, spontaneous bacterial peritonitis, and hepatorenal syndrome. Some studies support an anti-inflammatory role for albumin, but clinical trials for benefit from albumin infusions to reduce infection and prevent renal dysfunction have shown conflicting results.

**STUDY DESIGN:** Prospective, interventional, multicenter, randomized, open-label trial.

**SETTING:** 35 hospitals across England, Scotland, and Wales.

**SYNOPSIS:** Of patients with decompensated cirrhosis, 777 were randomized to receive either 20% human albumin solution to target serum albumin levels 30 g/Liter and higher or standard care. Most patients had alcohol-related liver disease with mean baseline albumin level of 23.2 plus/minus 3.7 g per liter. A median of 200 g of albumin was administered in the albumin group

to bring albumin level above 30 g per liter, as compared with a median of 20 g in the standard care group. The primary end point was a composite of infection, renal dysfunction, or death. A total of 113 patients (29.7%) in the albumin group and 120 patients (30.2%) in the control group had a primary end point



Dr. Bansal

event (adjusted odds ratio, 0.98; 95% confidence interval, 0.71-1.33;  $P = .87$ ). There were no differences noted between the two groups in incidence of death at 28 days, 3 months, and 6 months. More patients in the albumin infusion group had severe or life-threatening serious adverse events. A limitation of this trial was that it was not blinded. Another limitation of the study was median amount of albumin infused in the standard care group was lower than anticipated.

**BOTTOM LINE:** Targeted albumin therapy was not superior to standard of care in preventing the combined endpoint of infection, renal dysfunction, or death in patients hospitalized with decompensated cirrhosis.

**CITATION:** China L et al. A randomized trial of albumin infusions in hospitalized patients with cirrhosis. *N Eng J Med.* 2021 Mar 4;384:808-17. doi: 10.1056/NEJMoa2022166.

### 2 Colchicine in secondary prevention of coronary artery disease

**CLINICAL QUESTION:** Can colchicine reduce the risk of major adverse cardiovascular events (MACE) in patients with coronary artery disease (CAD)?

**BACKGROUND:** Colchicine has broad anti-inflammatory properties and has shown therapeutic benefit in conditions such as gouty arthritis, rheumatoid arthritis, familial Mediterranean fever, and pericarditis. However, for patients with established CAD, the therapeutic benefits and harms of colchicine remain inconclusive. This meta-analysis addresses colchicine use and the incidence of MACE in patients with CAD.

**STUDY DESIGN:** Meta-analysis of randomized controlled trials (RCTs).

**SETTING:** Systematic search in electronic databases of PubMed, The Cochrane Library, and Scopus to identify eligible studies.

**SYNOPSIS:** Investigators included five RCTs that met criteria to be included in the meta-analysis. These RCTs were published between 2013 and 2020 and had follow-up duration of greater than 6 months. Of a total of 11,790 patients with CAD, 5,906 were assigned to the colchicine group and 5,884 to the control group. Average age of patients was 60-66 years, and 83% of patients were men. Dosages of colchicine were 0.5 mg once or twice daily. There were a total 362 events in the colchicine group and 521 events in the control group. Compared with placebo, colchicine treatment was associated with a reduced risk of MACE (relative risk, 0.65; 95% CI, 0.52-0.82;  $P$  less than .001). There was no impact on cardiovascular mortality, and rates of adverse events were similar in both groups.

Limitations include heterogeneity across trials, the possibility of publication bias, and nonuniform definitions of MACE across trials. Furthermore, very long-term benefits and risks of colchicine could not be assessed because of follow-up times of less than 3 years.

**BOTTOM LINE:** Colchicine treat-

ment may reduce the risk of future cardiovascular events in CAD patients.

**CITATION:** Xia M et al. Meta-analysis evaluating the utility of colchicine in secondary prevention of coronary artery disease. *Am J Cardiol.* 2021 Feb 1;140:33-8. doi: 10.1016/j.amjcard.2020.10.043.

Dr. Bansal is division chief, Hospital Medicine, at Geisinger Medical Center, Danville, Pa.

By Malachi Courtney, MD

### 3 Toward a definition of persistent *S. aureus* bacteremia

**CLINICAL QUESTION:** In *Staphylococcus aureus* bacteremia, how are mortality and metastatic infections impacted according to the duration of bacteremia?

**BACKGROUND:** Persistent *S. aureus* bacteremia is not universally defined, and the impact of the duration of positive blood cultures on mortality has not been determined.

**STUDY DESIGN:** Secondary analysis of a prospective cohort study.

**SETTING:** 17 European tertiary care hospitals 2013-2015.

**SYNOPSIS:** Patients from 17 tertiary care hospitals who were diagnosed with *S. aureus* bacteremia were included in this study. Median duration of bacteremia was 3 days. Patients with more than 1 day of bacteremia had increased SOFA scores, C-reactive proteins, and Charlson comorbidity index score. There was a relatively low prevalence of MRSA at 11% of patients. Mortality at 90 days significantly increases from 22% with 1 day of bacteremia, 39% with 2-4 days of bacteremia, 43% with 5-7 days, and 36% with more than 7 days of bacteremia. With use of bootstrapping methods with 1,000 iterations, it was found that 2 or



Dr. Courtney

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more days was the most significant cut-off of duration of bacteremia for 90-day mortality. Patients with 5-7 days of bacteremia had the highest incidence (22%) of a new metastatic focus of infection.

**BOTTOM LINE:** Because of increased mortality and metastatic infection in patients with 2 or more days of bacteremia, the researchers suggest redefining the cutoff duration for persistent *S. aureus* bacteremia as 2 or more days. It should be noted that this is a secondary analysis of a study, so more trials should be completed to further clarify magnitude of problem.

**CITATION:** Kuehl R et al. Defining persistent *Staphylococcus aureus* bacteraemia: Secondary analysis of a prospective cohort study. *Lancet Infect Dis.* 2020 Dec;20(12):1409-17. doi: 10.1016/S1473-3099(20)30447-3.

#### 4 Nearly 20% of U.S. patients with bacteremia received discordant antibiotic therapy

**CLINICAL QUESTION:** What are the prevalence and effects of inappropriate therapy with antibiotics for bloodstream infections?

**BACKGROUND:** Serious bloodstream infections and sepsis require expeditious delivery of antibiotic therapy to decrease risk of morbidity or mortality. Prevalence and impact of discordant empiric antibiotic therapy is not well studied. This study sought to determine the prevalence and effect of inappropriate empiric antibiotic therapy in monomicrobial blood stream infections.

**STUDY DESIGN:** Retrospective cohort analysis.

**SETTING:** Electronic health record data from 131 hospitals in the United States.

**SYNOPSIS:** Of the total 37,344 monomicrobial bacteremia encounters during the study period, a total of 26,036 distinct encounters were included. The researchers reviewed encounters for specific bacteria, as well as the susceptibility of the bacteria to the antibiotics delivered. A discordant antibiotic was defined as an empiric antibiotic that did not display in vitro susceptibility to any systemic antibiotic that was administered on the day of blood culture testing. When a specific antibiotic was utilized but not reported in sensitivity testing, the researchers imputed sensitivity by interpreting in vitro resistance or sensitivity within the same antibiotic category (i.e., if

## SHORT TAKES

### Bundled payments in commercially insured population reduce costs for surgical procedures

An Employer-Provider Direct Payment Program modeled on Centers for Medicare & Medicaid Services (CMS) Bundled Payments for Care Improvement was implemented by several self-insured employers. The adoption of this program for three high-cost surgical procedures – joint replace-

ment, spinal fusion, and bariatric surgery – was associated with average \$4,229 (10.7%) reduction in cost. Both employer and employee costs decreased and a significant reduction in price variation was seen.

**CITATION:** Whaley C et al. An Employer-Provider Direct Payment Program is associated with lower episode costs: *Health Aff (Millwood).* 2021 Mar;40(3):445-52. doi: 10.1377/hlthaff.2020.01488.

a third-generation cephalosporin was reported to be effective, it was presumed a fourth-generation cephalosporin would also be active). Of the 26,036 patients included in the study, 4,165 (19%) received initial inappropriate antimicrobial therapy. The majority of bacterial isolates that were found to be discordant were of the Enterobacterales group (45%) or *Staphylococcus aureus* (32%). Regardless of in vitro susceptibility of the bacteria, presence of sepsis, or septic shock, inappropriate empiric antimicrobial therapy alone was associated with increased risk of mortality in all patients with bacteremia.

**BOTTOM LINE:** To decrease mortality associated with discordant treatment of bloodstream infections, the study results suggest the significance of identifying bacteria and the sensitivity patterns early in bloodstream infections. These findings are especially important for *S. aureus* and Enterobacterales infections.

**CITATION:** Kadri SS et al. Inappropriate empirical antibiotic therapy for bloodstream infections based on discordant in-vitro susceptibilities: A retrospective cohort analysis of prevalence, predictors, and mortality risk in U.S. hospitals. *Lancet Infect Dis.* 2021 Feb;21(2):241-51. doi: 10.1016/S1473-3099(20)30477-1.

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### By Bradley Flansbaum, DO, MHM

#### 5 Preoperative management of endocrine, hormonal, and urologic medications

**CLINICAL QUESTION:** How should providers manage endocrine and

urologic agents preoperatively?

**BACKGROUND:** There is an absence of literature related to perioperative medication management. Because of the heterogeneous mix of studies available, the topic required a review to vet best practices on the use of insulin and non-insulin diabetes mellitus-related agents; thyroid, corticosteroid, hormonal, and osteoporosis-related medications; and bladder and prostate treatments.

**STUDY DESIGN:** Consensus guideline developed by the Society for Perioperative Assessment and Quality Improvement comprising anesthesiology, perioperative medicine, hospital medicine, general internal medicine, and medical specialty experts. The SPAQI applied Delphi methodology in establishing the recommendations.

**SETTING:** Academically based departments of medicine, anesthesiology, hospital medicine, and endocrinology based in Wisconsin, Ohio, and Colorado.

**SYNOPSIS:** Given the widespread use of diabetic agents, the paper highlights and includes helpful tables outlining strategies for approaching various insulin and oral drugs before procedures. Most recommendations should be familiar to active practitioners (i.e., holding preparations taken orally and reducing insulin dosages the morning of surgery). Continue thyroid preparations and assess steroid dosages and compensate based on operative stress, using established guidelines. As for hormonal risks, administer them after consulting with VTE risk-assessment scores. For osteoporotic compounds, providers should hold bisphosphonates. As for urologic drugs, consultants can continue

most compounds with PDE-5 inhibitors and anticholinergics being the exceptions.

**BOTTOM LINE:** Hospitalists can apply this SPAQI review of perioperative endocrine and urologic medications to update their working knowledge of the lesser prioritized meds they will encounter during surgical evaluation.

**CITATION:** Pfeifer KJ et al. Preoperative management of endocrine, hormonal, and urologic medications: Society for perioperative assessment and quality improvement (SPAQI) consensus statement. *Mayo Clin Proc.* 2021 June 1;96(6):1655-69. doi: 10.1016/j.mayocp.2020.10.002.

#### 6 Strategies targeting ED physician decision-making could modify admission rates

**CLINICAL QUESTION:** ED physicians play a vital role in the decision to admit a patient. What is the physician-level variation in hospital admission rates for Medicare patients?

**BACKGROUND:** Rates of admission vary widely across both regions of the country and hospitals. Prior studies have documented variations in admission rates for Medicare beneficiaries, but these studies have focused on regional and hospital-level variation. The extent to which admission rates from the ED vary across physicians within institutions remains poorly understood.

**STUDY DESIGN:** Investigators examined Medicare fee-for-service claims for a 20% random sample of beneficiaries from January 2012 through September 2015 in a retrospective analysis analyzing the association of admission rates between ED physicians from within the same hospital. The researchers adjusted the data set for both physician and patient characteristics and comorbidities.

**SETTING:** ED visits to nonfederal hospitals (excluding Indian Health Service and Veterans Affairs hospitals) located in all 50 states and Washington, D.C.

**SYNOPSIS:** The physician-level adjusted admission rate was 38.9%, with a range between 32.2% and 45.6%. However, the researchers found the predicted risk for admission based on patient characteristics varied little among physicians. When they mined deeper, they found provider rates of admissions for one clinical condition were also predictive of their admission rates for other conditions. This finding



Dr. Flansbaum

## SHORT TAKES

**Lower risk of hypoglycemia with long-acting insulin analogs among older adults**

Retrospective study among older (age 65 years or older) community-residing patients found that the initiation of use of insulin with glargine or detemir was associated with a nearly 30% reduced risk of ED visits or hospitalizations for

hypoglycemia, compared with the initiation of NPH (Neutral Protamine Hagedorn) insulin use.

**CITATION:** Bradley MC et al. Severe hypoglycemia risk with long-acting insulin analogs vs. neutral protamine hagedorn insulin. *JAMA Intern Med.* 2021 May 1;181(5):598-607. doi: 10.1001/jamainternmed.2020.9176.

indicates physician-level tendencies mattered as they relate to hospital admission.

**BOTTOM LINE:** There is significant variation among ED physicians within the same hospital, suggesting an opportunity to devise targeted interventions to influence physician decision-making. Additionally, “average” group-based performance measures accounting for a large department may be deceiving; a composite score may conceal the actual drivers of an outcome (one to two doctors over an entire group).

**CITATION:** Smulowitz PB et al. Variation in emergency department admission rates among Medicare patients: Does the physician matter? *Health Aff (Millwood).* 2021 Feb;40(2):251-7. doi: 10.1377/hlthaff.2020.00670.

**7 IV radiocontrast has no harmful effect on kidney function**

**CLINICAL QUESTION:** Is intravenous radiocontrast associated with significant kidney injury?

**BACKGROUND:** Many hospitalists consider radiocontrast to be nephrotoxic. However, contemporary

observational studies find no evidence of an association between intravenous contrast and kidney injuries. As observational studies cannot establish causality, would employing an alternative study design (likening to “effective randomization”) confirm current trends in thinking?

**STUDY DESIGN:** The investigators applied a creative regression discontinuity strategy in their analysis. While performing a randomized controlled trial would be impractical, a pseudorandomized design was the most effective approach to evaluate an exposed and nonexposed contrast group for the purposes of minimizing confounding. By recruiting patients at risk for a pul-

monary embolism, above and below the 500-ng/mL D-dimer eligibility cutoff for computed tomographic pulmonary angiogram (CTPA), the research team recruited two cohorts of patients. Contrast administration was the sole distinction between the groups.

**SETTING:** The Canadian province of Alberta between 2013 and 2018.

**SYNOPSIS:** Of adult patients in the ED, 156,028 were included in the results. At baseline, the patients just above and below the CTPA eligibility cutoff were similar in terms of measured confounders. The investigators did not find associations between CTPA contrast and estimated glomerular filtration rate (eGFR), acute kidney injury, need for kidney

replacement therapy, or death at 6 months. Overall, there was a mean change in eGFR of -0.4 mL/min/1.73 m<sup>2</sup> (95% CI, -4.9-4.0) correlated with CTPA exposure. Subgroup analyses by risk factors such as age or diabetes showed no associations between dye exposure and long-term eGFR.

**BOTTOM LINE:** A more meticulous study design adds to our prior knowledge base, further establishing intravenous contrast as a surrogate and not a causal agent in eGFR declines.

**CITATION:** Goulden R et al. Association of intravenous radiocontrast with kidney function: A regression discontinuity analysis. *JAMA Intern Med.* 2021 Jun 1;181(6):767-74. doi: 10.1001/jamainternmed.2021.0916.

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By Tareq Islam, MD, MPH

**8 Cryoablation or drug therapy for initial treatment of AFib?**

**CLINICAL QUESTION:** Does catheter ablation as initial treatment for symptomatic atrial fibrillation lower

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Kenneth Simone, DO, SFHM  
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the incidence of AFib recurrence more than antiarrhythmic medication as initial therapy?

**BACKGROUND:** For the patient with symptomatic AFib, antiarrhythmic drugs are the initial therapy of choice according to the guideline. Often these medications have somewhat limited efficacy. When they fail, catheter ablation is superior to medication in maintaining sinus rhythm and improvement of quality of life. This study compared the efficacy of the use of catheter cryoballoon ablation with antiarrhythmic drugs to prevent the recurrence of atrial tachyarrhythmia.

**STUDY DESIGN:** Investigator-initiated, multicenter, open-label, randomized trial, blinded endpoint.

**SETTING:** 18 centers in Canada.

**SYNOPSIS:** Of adult patients (older than 18 years of age) who had symptomatic AFib, 303 were randomized in a 1:1 ratio to an initial strategy of catheter cryoballoon ablation (pulmonary vein isolation, n = 154) or antiarrhythmic drug therapy (mostly Flecainide, n = 149). At the time of enrollment, all the patients underwent insertion of an implantable

cardiac monitor to detect the timing of occurrence of arrhythmia and quantification of AFib burden. The main endpoint was the first recurrence of any atrial tachyarrhythmia (AFib, atrial flutter, or atrial tachycardia)



Dr. Islam

lasting 30 seconds or longer between 91 days and 365 days after either treatment strategy. At 1 year, 42.9% of patients who underwent cryoablation had documented recurrence of atrial tachyarrhythmia, compared with 67.8% among the antiarrhythmic drugs group (hazard ratio, 0.48; 95% CI, 0.35-0.66; *P* less than .001).

The rate of adverse events was 3.2% and 4.0% among the ablation group and antiarrhythmic drug group, respectively. One limitation was lack of power to examine cardiovascular outcome, limited to 1 year follow-up.

**BOTTOM LINE:** Catheter ablation as initial therapy for symptomatic Afib had a significantly lower rate of recurrence of atrial tachyarrhythmia than antiarrhythmic drug therapy.

**CITATION:** JG Andrade et al. Cryoablation or drug therapy for initial treatment of atrial fibrillation. *N Engl J Med.* 2021 Jan 28;384(4):305-15. doi: 10.1056/NEJMoa2029980.

## 9 Baricitinib plus remdesivir for hospitalized adults with COVID-19

**CLINICAL QUESTION:** Is baricitinib plus remdesivir superior to remdesivir alone in reducing recovery time and accelerating improvement in clinical status among patients with COVID-19 infection?

**BACKGROUND:** The Adaptive COVID-19 Treatment Trial (ACTT-1) has shown remdesivir is an effective treatment for the hospitalized adult patient with COVID-19 pneumonia. However, significant mortality and morbidity still present despite remdesivir use in patients with severe disease from COVID-19 infection. There is a hypothesis that mitigating the immune response and, thus, preventing a hyperinflammatory state may further improve clinical outcomes. Baricitinib, a selective inhibitor of Janus kinase 1 and 2, inhibits the intracellular signaling pathway of cytokines known to be elevated in severe COVID-19. The combined effect of baricitinib plus remdesivir is unknown.

**STUDY DESIGN:** Double-blinded, placebo-controlled randomized trial, multicenter and multinational.

**SETTING:** 67 trial sites in eight countries (Denmark, Japan, Mexico, Singapore, South Korea, Spain, the United Kingdom, and the United States).

**SYNOPSIS:** Of eligible patients, 1,033 were randomly assigned in a 1:1 ratio to receive either remdesivir and baricitinib (515 patients) or remdesivir and placebo (518 patients). The dose of remdesivir was an intravenous 200-mg loading dose on day 1, followed by a 100-mg maintenance dose administered on days 2 through 10 or until discharge, and the dose of baricitinib was 4 mg daily by mouth or nasogastric tube for 14 days or until hospital discharge. Time to recovery was the primary outcome of the study. A total of 498 patients in the combination group and 495 in the control group completed the trial until day 29, recovered, or died. The mean age of the study population was 55.4 years; 63.1% were male and 48.0% were white. The combination group recovered 1 median day faster than the control group (7 days vs. 8 days; rate ratio, 1.16; 95% CI, 1.01-1.32; *P* = .03). Median recovery time among patients receiving noninvasive ventilation or high-flow oxygen was 10 days among the combination group, compared with 18 days in the control group.

**BOTTOM LINE:** Combination of

## SHORT TAKES

### Clinical outcomes are not impacted by team structure

Comparison of hospitalist teams, incorporated advanced practice clinician teams, and resident teams were compared for clinical outcomes including length of stay, inpatient mortality, 30-day readmission, total direct cost, discharge time, and consultation utilization. The clinical outcomes were not significantly different when comparing the three teams. Utilization

of consultants and total direct cost was higher with resident and APCs teams. This study suggests clinical outcomes are similar no matter the form of medical team.

**CITATION:** Johnson SA et al. Comparison of resident, advanced practice clinician, and hospitalist teams in an academic medical center: Association with clinical outcomes and resource utilization. *J Hosp Med.* 2020 Dec;15(12):709-15. doi: 10.12788/jhm.3475.

baricitinib and remdesivir was superior to remdesivir alone in reducing recovery time and accelerating improvement, notably among patients receiving high-flow oxygen or non-invasive mechanical ventilation, and was associated with fewer adverse events.

**CITATION:** A.C. Kalil et al. Baricitinib plus remdesivir for hospitalized adults with Covid-19. *N Engl J Med.* 2021 Mar 4;384:795-807. doi: 10.1056/NEJMoa2031994.

### 10 Rapid intermittent bolus of hypertonic saline may be preferred treatment of symptomatic hyponatremia

**CLINICAL QUESTION:** Between rapid intermittent bolus and slow continuous infusion of hypertonic saline, which one carries more risk of overcorrection in treating hyponatremia?

**BACKGROUND:** Of hospitalized patients, 14%-54% have hyponatremia and hypertonic saline is an effective treatment. The concept of rapid intermittent bolus (RIB) of hypertonic saline was introduced in 2005 which has several benefits over slow continuous infusion (SCI), including rapid partial correction of serum sodium, limitation overcorrection, and omission of the need for calculations. This study compared the efficacy and safety of RIB and SCI with hypertonic saline in patients with moderately severe to severe symptomatic hyponatremia.

**STUDY DESIGN:** Prospective, investigator-initiated, multicenter, open-label, randomized clinical trial, intention-to-treat analysis.

**SETTING:** Three general hospitals in Korea.

**SYNOPSIS:** From August 2016 to October 2018, 178 patients (older than 18 years of age) with moderately severe to severe symptoms

of hyponatremia and glucose-corrected serum sodium (sNa) of 125mmol/L or less were randomly assigned in 1:1 manner to an SIC (n = 91) or RIB (n = 87) group. The primary outcome was the incidence of overcorrection at any given period (sNa increase greater than 12 mmol/L in 24 hours or greater than 18 mmol/L in 48 hours), and the secondary outcome was efficacy and safety. Baseline characteristics were similar between RIB and SCI groups. Overcorrection occurred in 17.2% patients in the RIB group and 24.2% patients in the SCI group (absolute risk difference, -6.9%; 95% CI, -18.8%-4.9%; *P* = .26). There were no events of osmotic demyelination syndrome in either group. The RIB group showed a lower incidence of relowering treatment than the SCI group (41.4% vs. 57.1%; ARD, -15.8%; 95% CI, -30.3% to -1.3%; *P* = .04; number needed to treat, 6.3). Limitations included higher than expected participant dropout, overcorrection as a primary outcome, and selection bias in the allocation sequence.

**BOTTOM LINE:** Both RIB and SIC therapies of hypertonic saline for treating hyponatremia were effective and safe, with no difference in the overcorrection risk. However, RIB therapy had a lower incidence of therapeutic relowering of sNa and tended to have better efficacy in achieving sNa within 1 hour, compared with SCI.

**CITATION:** Baek SH et al. Risk of overcorrection in rapid intermittent bolus vs. slow continuous infusion therapies of hypertonic saline for patients with symptomatic hyponatremia: The SALSA randomized clinical trial. *JAMA Intern Med.* 2021 Jan 1;181(1):81-92. doi: 10.1001/jamainternmed.2020.5519.

Dr. Islam is associate professor, Hospital Medicine, at Geisinger Medical Center, Danville, Pa.

# Hospitalists helped plan pandemic field hospitals

'It's a great thing to be overprepared'

By Larry Beresford

At the height of the COVID-19 pandemic's terrifying first wave in the spring of 2020, dozens of hospitals in high-incidence areas either planned or opened temporary, emergency field hospitals to cover anticipated demand for beds beyond the capacity of local permanent hospitals.

Chastened by images of overwhelmed health care systems in Northern Italy and other hard-hit areas, the planners used available modeling tools and estimates for projecting maximum potential need in worst-case scenarios. Some of these temporary hospitals never opened. Others opened in convention centers, parking garages, or parking lot tents, and ended up being used to a lesser degree than the worst-case scenarios.

But those who participated in the planning – including, in many cases, hospitalists – believe they created alternate care site manuals that could be quickly revived in the event of future COVID surges or other, similar crises. Better to plan for too much, they say, than not plan for enough.

Field hospitals or alternate care sites are defined in a recent journal article in *Prehospital Disaster Medicine* as “locations that can be converted to provide either inpatient and/or outpatient health services when existing facilities are compromised by a hazard impact or the volume of patients exceeds available capacity and/or capabilities.”

The lead author of that report, Sue Anne Bell, PhD, FNP-BC, a disaster expert and assistant professor of nursing at the University of Michigan, was one of five members of the leadership team for planning UM's field hospital. They used an organizational unit structure based on the U.S. military's staffing structure, with their work organized around six units of planning: personnel and labor, security, clinical operations, logistics and supply, planning and training, and communications. This team planned a 519-bed step-down

care facility, the Michigan Medicine Field Hospital, for a 73,000-foot indoor track and performance facility at the university, 3 miles from UM's main hospital. The aim was to provide safe care in a resource-limited environment.

“We were prepared, but the need never materialized as the peak of COVID cases started to subside,” Dr. Bell said. The team was ready to open within days using a “T-Minus” framework of days remaining on an official countdown clock. But when the need and deadlines kept getting pushed back, that gave them more time to develop clearer procedures.

Two Michigan Medicine hospitalists, Christopher Smith, MD, and David Paje, MD, MPH, both professors at UM's medical school, were intimately involved in the process. “I was the medical director for the respiratory care unit that was opened for COVID patients, so I was pulled in to assist in the field hospital planning,” said Dr. Smith.

Dr. Paje was director of the short-stay unit and had been a medical officer in the U.S. Army, with training in how to set up military field hospitals. He credits that background as helpful for UM's COVID field hospital planning, along with his experience in hospital medicine operations.

“We expected that these patients would need the expertise of hospitalists, who had quickly become familiar with the peculiarities of the new disease. That played a role in the decisions we made. Hospitalists were at the front lines of COVID care and had unique clinical insights about managing those with severe disease,” Dr. Paje added.

“When we started, the projections were dire. You don't want to believe something like that is going to happen. When COVID started to cool off, it was more of a relief to us than anything else,” Dr. Smith said. “Still, it was a very worthwhile exercise. At the end of the day, we put together a comprehensive guide, which is ready for the next crisis.”

**A convention center hospital**  
A COVID-19 field hospital was

planned and executed at an exhibit hall in the Baltimore Convention Center, starting in March 2020 under the leadership of Johns Hopkins Bayview hospitalist Eric E. Howell, MD, MHM, who eventually handed over responsibilities as chief medical officer when he assumed the position of CEO for the Society of Hospital Medicine in July of that year.

Hopkins collaborated with the University of Maryland health system and state leaders, including the Secretary of Health, to open a 252-bed temporary facility, which at its peak carried a census of 48 patients, with no on-site mortality or cardiac arrests, before it was closed in June 2021 – ready to reopen if necessary. It also served as Baltimore's major site for polymerase chain reaction COVID-19 testing, vaccinations, and monoclonal antibody infusions, along with medical research.

“My belief at the time we started was that my entire 20-year career as a hospitalist had prepared me for the challenge of opening a COVID field hospital,” Dr. Howell said. “I had learned how to build clinical programs. The difference was that instead of months and years to build a program, we only had a few weeks.”

His first request was to bring on an associate medical director for the field hospital, Melinda E. Kantsiper, MD, a hospitalist and director of clinical operations in the Division of Hospital Medicine at Johns Hopkins Bayview. She became the field hospital's chief medical officer when Dr. Howell moved to SHM. “As hospitalists, we are trained to care for the patient in front of us while at the same time creating systems that can adjust to rapidly changing circumstances,” Dr. Kantsiper said. “We did what was asked and set up a field hospital that cared for a total of 1,500 COVID patients.”

Hospitalists have the tools that are needed for this work, and



The Renown COVID-19 field hospital photographed under construction in Reno.

shouldn't be reluctant to contribute to field hospital planning, she said. “This was a real eye-opener for me. Eric explained to me that hospitalists really practice acute care medicine, which doesn't have to be within the four walls of a hospital.”

The Baltimore field hospital has been a fantastic experience, Dr. Kantsiper added. “But it's not a building designed for health care delivery.” For the right group of providers, the experience of working in a temporary facility such as this can be positive and exhilarating. “But we need to make sure we take care of our staff. It takes a toll. How we keep them safe – physically and emotionally – has to be top of mind,” she said.

The leaders at Hopkins Medicine and their collaborators truly engaged with the field hospital's mission, Dr. Howell added. “They gave us a lot of autonomy and helped us break down barriers. They gave us the political capital to say proper PPE was absolutely essential. As hard and devastating as the pandemic has been, one takeaway is that we showed that we can be more flexible and elastic in response to actual needs than we used to think.”

## Range of challenges

Among the questions that need to be answered by a field hospital's planners, the first is “where to put it?” The answer is, hopefully, someplace not too far away, large enough, with ready access to supplies and intake. The next question is “who is the patient?” Clinicians must determine who goes to the field hospital versus who stays at the standing hospital. How sick should these patients be? And when do they need to

*Continued on following page*



Dr. Bell



Dr. Smith



Dr. Howell

Continued from previous page  
go back to the permanent hospital? Can staff be trained to recognize when patients in the field hospital are starting to decompensate? The EPIC Deterioration Index is a proprietary prediction model that was used by more than a hundred hospitals during the pandemic.

The hospitalist team may develop specific inclusion and exclusion criteria – for example, don't admit patients who are receiving oxygen therapy above a certain threshold or who are hemodynamically unstable. These criteria should reflect the capacity of the field hospital and the needs of the permanent hospital. At Michigan, as at other field hospital sites, the goal was to offer a step-down or postacute setting for patients with COVID-19 who were too sick to return home but didn't need acute or ICU-level care, thereby freeing up beds at the permanent hospital for patients who were sicker.

Other questions: What is the process for admissions and discharges? How will patients be transported? What kind of staffing is needed, and what levels of care will be provided? What about rehabilitation services, or palliative care? What about patients with substance abuse or psy-

chiatric comorbidities?

"Are we going to do paper charting? How will that work out for long-term documentation and billing?" Dr. Bell said. A clear reporting structure and communication pathways are essential. Among the other operational processes to address, outlined in Dr. Bell's article, are orientation and training, PPE donning and doffing procedures, the code or rapid response team, patient and staff food and nutrition, infection control protocols, pharmacy services, access to radiology, rounding procedures, staff support, and the morgue.

One other issue that shouldn't be overlooked is health equity in the field hospital. "Providing safe and equitable care should be the focus. Thinking who goes to the field hospital should be done within a health equity framework," Dr. Bell said. She also wonders if field hospital planners are sharing their experience with colleagues across the country and developing more collaborative relationships with other hospitals in their communities.

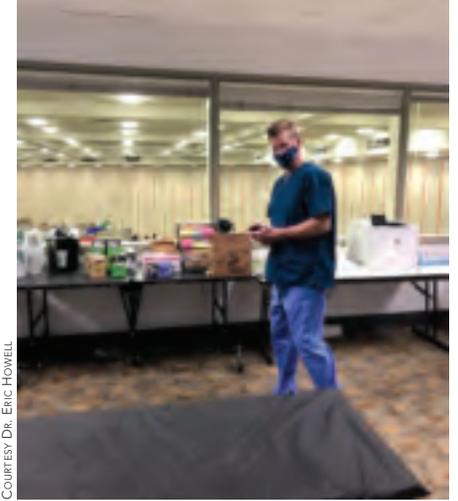
"Field hospitals can be different things," Dr. Bell said. "The important take-home is it doesn't have to be in a tent or a parking garage, which

can be suboptimal." In many cases, it may be better to focus on finding unused space within the hospital – whether a lobby, staff lounge, or unoccupied unit – closer to personnel, supplies, pharmacy, and the like. "I think the pandemic showed us how unprepared we were as a health care system, and how much more we need to do in preparation for future crises."

### Limits to the temporary hospital

In New York City, which had the country's worst COVID-19 outbreak during the first surge in the spring of 2020, a 1,000-bed field hospital was opened at the Jacob Javits Center in March 2020 and closed that June. "I was in the field hospital early, in March and April, when our hospitals were temporarily overrun," said hospitalist Mona Krouss, MD, FACP, CPPS, NYC Health + Hospitals' director of patient safety. "My role was to figure out how to get patients on our medical floors into these field hospitals, with responsibility for helping to revise admission criteria," she said.

"No one knew how horrible it would become. This was so unanticipated, so difficult to operationalize. What they were able to create



COURTESY DR. ERIC HOWELL

Dr. Eric E. Howell was chief medical officer for the Joint Commission-accredited Baltimore Civic Center Field Hospital for COVID-19 patients, opened in March 2020.

was amazing, but there were just too many barriers to have it work smoothly," Dr. Krouss said.

"The military stepped in, and they helped us so much. We wouldn't have been able to survive without their help." But there is only so much a field hospital can do to provide acute medical care. Later, military medical teams shifted to roles in temporary units inside the permanent hospitals. "They came to the hospital wanting to be deployed," she said.

"We could only send patients [to the field hospital] who were fairly stable, and choosing the right ones



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was difficult.” Dr. Krouss said. In the end, not a lot of COVID patients from NYC Health + Hospitals ended up going to the Javits Center, in part because paperwork and logistics were barriers. A process was established for referring doctors to speak with a New York City Department



Dr. Krouss

of Health employee to go through the criteria for admission to the field hospital.

“That could take up to 30 minutes before getting approval. Then you had to go through the same

process all over again for sign-out to another physician, and then register the patient with a special bar code. Then you had to arrange ambulance transfer. Doctors didn’t want to go through all of that – everybody was too busy,” she explained. Hospitalists have since worked on streamlining the criteria. “Now we have a good process for the future. We made it more seamless,” she noted.

Susan Lee, DO, MBA, hospitalist and chief medical officer for Renown Regional Medical Center in Reno, Nev., helped to plan an alternate care site in anticipation of up to a thousand COVID patients in her community – far beyond the scope of the existing hospitals. Hospitalists were involved the entire time in planning, design of the unit, design of staffing models, care protocols, and the like, working through an evidence-based medical committee and a COVID-19 provider task force for the Renown Health System.



Dr. Lee

“Because of a history of fires and earthquakes in this region, we had an emergency planning infrastructure in place,” Dr. Lee said. “We put the field hospital on the first and second floors of a parking garage, with built-in negative pressure capacity. We also built space for staff break rooms and desk space. It took 10 days to build the hospital, thanks to some very talented people in management and facility design.”

Then, the hospital was locked up and sat empty for 7 months, until the surge in December 2020, when Reno was hit by a bigger wave – this time exceeding the hospitals’ capacity. Through mid-January of 2021, clinicians cared for approxi-

mately 240 COVID-19 patients, up to 47 at a time, in the field hospital. A third wave in the autumn of 2021 plateaued at a level lower than the previous fall, so the field hospital is not currently needed.

### Replicating hospital workflows

“We ensured that everybody who needed to be within the walls of the permanent hospitals was able to stay there,” said Dr. Lee’s colleague, hospitalist Adnan (Eddy) Akbar, MD. “The postacute system we ordinarily rely on was no longer accepting patients. Other hospitals in the area were able to manage within their capacity because Renown’s field hospital could admit excess patients.”

When the field hospital finally opened, Dr. Akbar said, “we had a good feeling. We were ready. If something more catastrophic had come down, we were ready to care for more patients. In the field hospital you have to keep monitoring your workflow – almost on a daily basis. But we felt privileged to be working for a system where you knew you can go and care for everyone who needed care.”



Dr. Baughman

One upside of the field hospital experience for participating clinicians, Dr. Lee added, is the opportunity to practice creatively. “The downside is it’s extremely expensive, and has consequences for the mental health of staff. Like so many of these things, it wore on people over time. And recently the patients have become a lot less gracious.”

Amy Baughman, MD, a hospitalist at Massachusetts General Hospital in Boston, was co-medical director of the post-acute care section of a 1,000-bed field hospital, Boston Hope Medical Center, opened in April 2020 at the Boston Convention and Exhibition Center. The other half of the facility was dedicated to undomiciled COVID-19 patients who had no place else to go. Peak census was around 100 patients, housed on four units, each with a clinical team led by a physician.

Dr. Baughman’s field hospital experience has taught her the importance of “staying within your domain of expertise. Physicians are attracted to difficult problems and want to do everything themselves. Next time I won’t be the one installing hand sanitizer dispensers.” A big part of running a field hospital is logistics, she said, and physicians are

trained clinicians, not logistics engineers.

“So it’s important to partner with logistics experts. A huge part of our success in building a facility in 9 days of continuous construction was the involvement of the National Guard,” she said. An incident command system was led by an experienced military general incident commander, with two clinical codirectors. The U.S. army also sent in full teams of health professionals.

The facility admitted far fewer patients than the worst-case projections before it closed in June 2020. “But at the end of the day, we provided a lot of excellent care,” Dr. Baughman said.

“This was about preparing for a disaster. It was all hands on deck, and the hands were health professionals,” she said. “We spent a lot of money for the patients we took care of, but we had no choice, based on what we believed could happen. At that time, so many nursing facilities and homeless shelters were closed



Boston Hope Medical Center is a 1,000-bed field hospital for patients with COVID-19.

to us. It was impossible to predict what utilization would be.”

Subsequent experience has taught that a lot of even seriously ill COVID-19 patients can be managed safely at home, for example, using accelerated home oxygen monitoring with telelinked pulse oximeters. But in the beginning, Dr. Baughman said, “it was a new situation for us. We had seen what happened in Europe and China. It’s a great thing to be overprepared.”

For a complete list of references, see the online version of this article at [www.the-hospitalist.org](http://www.the-hospitalist.org).

It is dedicated members like you who are the foundation of the success of hospital medicine. Thank you for everything you have done for patients, our profession, and SHM. Throughout this time it’s important that we continue to support each other and the hospital medicine community.

We’re all in this together.

”

**Eric Howell, MD, MHM,**  
**CEO, Society of Hospital Medicine**

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# Rivaroxaban may lead to higher bleeding risk

By Jennifer Lubell

MDedge News

**A** study that compared three types of direct oral anticoagulants (DOACs) found that rivaroxaban was associated with a much higher risk of overall and major gastrointestinal bleeding than apixaban or dabigatran.

The results, which were published in *Annals of Internal Medicine*, could help guide DOAC selection for high-risk groups with a prior history of peptic ulcer disease or major GI bleeding, said lead study authors Arnar Bragi Ingason, MD, and Einar S. Björnsson, MD, PhD.

DOACs treat conditions such as atrial fibrillation, venous thromboembolism, and ischemic stroke and are known to cause GI bleeding. Previous studies have suggested that rivaroxaban poses a higher GI bleeding risk than other DOACs.

These studies, which used large administrative databases, “had an inherent risk of selection bias due to insurance status, age, and comorbidities due to their origin from insurance/administrative databases. In addition, they lacked phenotypic details on GI bleeding events,” said Dr. Björnsson and Dr. Ingason, who are both of Landspítali University Hospital, Reykjavik, Iceland.

Rivaroxaban is administered as a single daily dose, compared with apixaban’s and dabigatran’s twice-daily regimens. “We hypothesized that this may lead to a greater variance in drug plasma concentration, making these patients more susceptible to GI bleeding,” the lead authors said.

Using data from the Icelandic Medicine Registry, a national database of outpatient prescription information, they compared rates of GI bleeding among new users of apixaban, dabigatran, and rivaroxaban from 2014 to 2019. Overall, 5,868 patients receiving one of the DOACs took part in the study. Among these participants, 3,217 received rivaroxaban, 2,157 received apixaban, and 494 received dabigatran.

The researchers used inverse probability weighting, Kaplan–Meier survival estimates, and Cox regression to compare GI bleeding.

Compared with dabigatran, rivaroxaban was associated with a 63%-104% higher overall risk for GI bleeding and 39%-95% higher risk for major GI bleeding. Rivaroxaban

also had a 40%-42% higher overall risk for GI bleeding and 49%-50% higher risk for major GI bleeding, compared with apixaban.

The investigators were surprised

by the low rate of upper-GI bleeding for dabigatran, compared with the other two drugs. “However, these results must be interpreted in the context that the dabigatran group was

relatively small,” said Dr. Björnsson and Dr. Ingason.

Overall, the study cohort was small, compared with previous registry studies.

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# The Hospitalist

Investigators also did not account for socioeconomic status or lifestyle factors, such as alcohol consumption or smoking. “However, because the cost of all DOACs is similar in Iceland, selection bias due to socioeconomic status is unlikely,” the investigators reported in their paper.

“We are currently working on comparing the rates of thromboembolisms and overall major bleeding events between the drugs,” the lead authors said.

Though retrospective, the study by Ingason et al. “is likely as close as is feasible to a randomized trial

as is possible,” said Don C. Rockey, MD, of the Medical University of South Carolina, Charleston, in an interview.

“It is important to take away that there may be differences among the DOACs in terms of where in the GI tract the bleeding occurs,” he said.

In the study, the greatest differences appeared to be in the upper-GI tract, with rivaroxaban outpacing apixaban and dabigatran. In patients who are at risk for upper-GI bleeding, it may be reasonable to consider use of dabigatran or apixaban, Dr. Rockey suggested.

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# The Hospitalist

# HEPA filters may clean SARS-CoV-2 from the air

By Marcia Frellick

**H**igh-efficiency particulate air (HEPA) filters and ultraviolet-light sterilization effectively

remove SARS-CoV-2 particles from the air — the first such evidence in a real-world test, researchers reported in the preprint server medRxiv.

The journal Nature reported Oct. 6 that the research, which has not been peer-reviewed, suggests the filters may help reduce the risk of hospital-acquired SARS-CoV-2.

Researchers, led by intensivist Andrew Conway-Morris, MBChB, PhD, with the division of anaesthesia in the school of clinical medicine at University of Cambridge (England), write that earlier experiments assessed air filters' ability to remove inactive particles in carefully controlled environments, but it was unknown how they would work in a real-world setting.

Coauthor Vilas Navapurkar, MBChB, an ICU physician at Addenbrooke's Hospital in Cambridge, said that hospitals have used portable air filters when their isolation facilities are full, but evidence was needed as to whether such filters are effective or whether they provide a false sense of security.

The researchers installed the filters in two fully occupied COVID-19 wards — a general ward and an ICU. They chose HEPA filters because they can catch extremely small particles. The team collected air samples from the wards during a week when the air filters were on and 2 weeks when they were turned off, then compared results.

According to the study, "airborne SARS-CoV-2 was detected in the ward on all five days before activation of air/UV filtration, but on none of the five days when the air/UV filter was operational; SARS-CoV-2 was again detected on four out of five days when the filter was off."

Airborne SARS-CoV-2 was not frequently detected in the ICU, even when the filters were off.

The authors suggest several potential explanations for this, "including slower viral replication at later stages of the disease." Therefore, the authors say, filtering the virus from the air might be more important in general wards than in ICUs.

The filters significantly reduced the other microbial bioaerosols in both the ward (48 pathogens detected before filtration, 2 after,  $P = .05$ ) and the ICU (45 pathogens detected before filtration, 5 after,  $P = .05$ ).

National Institute for Occupational Safety and Health cyclonic aerosol samplers and PCR tests were used to detect airborne SARS-CoV-2 and other microbial bioaerosol.

David Fisman, MD, an epidemiologist at the University of Toronto, who was not involved in the research, said in the Nature article, "This study suggests that HEPA air cleaners ... are a cheap and easy way to reduce risk from airborne pathogens."

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# The Hospitalist

Key Clinical Question

# What makes a urinary tract infection complicated?

Consider anatomical and severity risk factors

By Nhi N. Vu, MD; and Adam J. Gray, MD

**Case**

A 72-year-old woman with type 2 diabetes mellitus presents with acute dysuria, fever, and flank pain. She had a urinary tract infection (UTI) 3 months prior treated with nitrofurantoin. Temperature is 102° F, heart rate 112 beats per minute, and the remainder of vital signs are normal. She has left costovertebral-angle tenderness. Urine microscopy shows 70 WBCs per high power field and bacteria. Is this urinary tract infection complicated?

**Background**

The urinary tract is divided into the upper tract, which includes the kidneys and ureters, and the lower urinary tract, which includes the bladder, urethra, and prostate. Infection of the lower urinary tract is referred to as cystitis, while infection of the upper urinary tract is pyelonephritis. A UTI is the colonization

of pathogen(s) within the urinary system that causes an inflammatory response resulting in symptoms and requiring treatment. UTIs occur when there is reduced urine flow and an increase in colonization risk, and when there are factors that facilitate ascent such as catheterization or incontinence.

There are an estimated 150 million cases of UTIs worldwide per year, accounting for \$6 billion in health care expenditures.<sup>1</sup> In the inpatient setting, about 40% of nosocomial infections are associated with urinary catheters. This equates to about 1 million catheter-associated UTIs per year in the United States, and up to 40% of hospital gram-negative bacteremia per year are caused by UTIs.<sup>1</sup>

UTIs are often classified as either uncomplicated or complicated infections, which can influence the depth of management. UTIs have a wide spectrum of symptoms and can manifest anywhere from mild dysuria treated successfully with outpatient antibiotics to florid sepsis. Uncomplicated simple cystitis is often treated as an outpatient with oral nitrofurantoin or trimethoprim-sulfamethoxazole.<sup>2</sup> Complicated UTIs are treated with broader antimicrobial coverage, and depending on severity, could require intravenous antibiotics. Many factors affect how a UTI manifests and

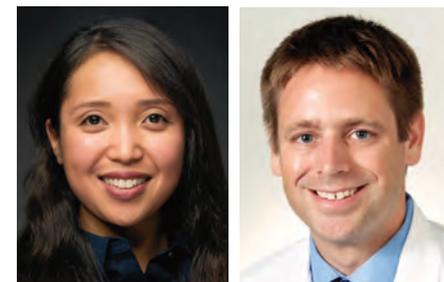
determining whether an infection is “uncomplicated” or “complicated” is an important first step in guiding management. Unfortunately, there are differing classifications of “complicated” UTIs, making it a complicated issue itself. We outline two common approaches.

**Anatomic approach**

A commonly recognized definition is from the American Urological Association, which states that complicated UTIs are symptomatic cases associated with the presence of “underlying, predisposing conditions and not necessarily clinical severity, invasiveness, or complications.”<sup>3</sup>

These factors include structural or functional urinary tract abnormalities or urinary instrumentation (see Table 1). These predisposing conditions can increase microbial colonization and decrease therapy efficacy, thus increasing the frequency of infection and relapse.

This population of patients is at high risk of infections with more resistant bacteria such as extended-spectrum beta-lactamase (ESBL) producing *Escherichia coli* since they often lack the natural genitourinary barriers to infection. In addition, these patients more often undergo multiple antibiotic courses for their frequent infections, which also contributes to their risk of ESBL infections. Genitourinary abnormalities interfere with nor-



Dr. Vu

Dr. Gray

Dr. Vu is a hospitalist at the University of Kentucky, Lexington. Dr. Gray is a hospitalist at the University of Kentucky and the Lexington Veterans Affairs Medical Center.

mal voiding, resulting in impaired flushing of bacteria. For instance, obstruction inhibits complete urinary drainage and increases the persistence of bacteria in biofilms, especially if there are stones or indwelling devices present. Biofilms usually contain a high concentration of organisms including *Proteus mirabilis*, *Morgenella morganii*, and *Providencia spp.*<sup>4</sup> Keep in mind that, if there is an obstruction, the urinalysis might be without pyuria or bacteriuria.

Instrumentation increases infection risks through the direct introduction of bacteria into the genitourinary tract. Despite the efforts in maintaining sterility in urinary catheter placement, cath-

*Continued on following page*

**Key points**

- The anatomical approach to defining complicated UTIs considers the presence of underlying, predisposing conditions such as structurally or functionally abnormal genitourinary tract or urinary instrumentation or foreign bodies.
- The severity approach to defining complicated UTIs considers the severity of presentation including the presence of systemic manifestations.
- Both approaches should consider populations that are at risk for recurrent or multi-drug-resistant infections and infections that can lead to high morbidity.
- Either approach can be used as a guide, but neither should replace clinical suspicion and judgment in determining the depth of treatment.

Complicated urinary tract infections (must have one or more)	
Structurally / functionally abnormal genitourinary tract	Obstruction <ul style="list-style-type: none"> <li>• Ureteric / urethral strictures, carcinoma of the urinary system, bladder outlet obstruction, diverticulum of bladder or urethra, urinary fistula, infected renal stones, infected renal cysts, prostatic hypertrophy, congenital abnormalities</li> </ul> Impaired voiding <ul style="list-style-type: none"> <li>• Vesicoureteral reflux, cystocele, neurogenic bladder</li> </ul>
Urinary instrumentation or foreign bodies	<ul style="list-style-type: none"> <li>• Indwelling catheter, intermittent catheterization, ureteric stents, nephrostomy tubes</li> </ul>

Table 1: The anatomic approach

Continued from previous page

eters provide a nidus for infection. Catheter-associated UTI (CAUTI) is defined by the Infectious Disease Society of America as UTIs that occur in patients with an indwelling catheter or who had a catheter removed for less than 48 hours who develop urinary symptoms and cultures positive for uropathogenic bacteria.<sup>4</sup> Studies show that in general patients with indwelling catheters will develop bacteriuria over time, with 10%-25% eventually developing symptoms.

**Severity approach**

There are other schools of thought that categorize uncomplicated versus complicated UTIs based on the severity of presentation (see Table 2). An uncomplicated UTI would be classified as symptoms and signs of simple cystitis limited to dysuria, frequency, urgency, and suprapubic pain. With a symptom severity approach, systemic findings such as fever, chills, emesis, flank pain, costovertebral angle tenderness, or other findings of sepsis would be classified as a complicated UTI. These systemic findings would suggest an extension of infection beyond the bladder.

**Additional reading**

- Choe HS et al. Summary of the UAA AAUS guidelines for urinary tract infections. *Int J Urol*. 2018 Mar;25(3):175-85. doi: 10.1111/iju.13493.
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The argument for a symptomatic-based approach of classification is that the severity of symptoms should dictate the degree of management. Not all UTIs in the anatomic approach are severe. In fact, populations that are considered at risk for complicated UTIs by the

**Severity approach to classifying complicated UTIs**

Signs and symptoms suggesting ascending infection beyond the bladder	<ul style="list-style-type: none"> <li>• Fever, chills, rigors</li> <li>• Flank pain, costovertebral angle tenderness</li> <li>• Nausea, emesis</li> </ul>
Presence of systemic complications	<ul style="list-style-type: none"> <li>• Bacteremia</li> <li>• Multiorgan dysfunction (sepsis, renal failure, encephalopathy)</li> </ul>

**Table 2:** The severity approach

AUA guidelines in Table 1 often have mild symptomatic cystitis or asymptomatic bacteriuria. Asymptomatic bacteriuria is the colonization of organisms in the urinary tract without active infection. For instance, bacteriuria is present in almost 100% of people with chronic indwelling catheters, 30%-40% of neurogenic bladder requiring intermittent catheterization, and 50% of elderly nursing home residents.<sup>4</sup> Not all bacteriuria triggers enough of an inflammatory response to cause symptoms that require treatment.

**Ultimate clinical judgment**

Although there are multiple different society recommendations in distinguishing uncomplicated versus complicated UTIs, considering both anatomical and severity risk factors can better aid in clinical decision-making rather than abiding by one classification method alone.

Uncomplicated UTIs from the AUA guidelines can cause severe infections that might require longer courses of broad-spectrum antibiotics. On the other hand, people with anatomic abnormalities can present with mild symptoms that can be treated with a narrow-spectrum antibiotic for a standard time course. Recognizing the severity of the infection and using clinical judgment aids in antibiotic stewardship.

Although the existence of algorithmic approaches can help guide clinical judgment, accounting for the spectrum of host and bacterial factors should ultimately determine the complexity of the disease and management.<sup>3</sup> Using clinical suspicion to determine when a UTI should be treated as a complicated infection can ensure effective treatment and decrease the likelihood of sepsis, renal scarring, or end-stage disease.<sup>5</sup>

*Continued on following page*



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**Quiz**



**A** 68-year-old woman with type 2 diabetes mellitus presents to the emergency department with acute fever, chills, dysuria, frequency, and suprapubic pain. She has associated nausea, malaise, and fatigue. She takes metformin and denies recent antibiotic use. Her temperature is 102.8° F, heart rate 118 beats per minute, blood pressure 118/71 mm Hg, and her respiratory rate is 24 breaths per minute. She is ill-appearing and has mild suprapubic tenderness. White blood cell count is 18 k/mL. Urinalysis is positive for leukocyte esterase, nitrites, and bacteria. Urine microscopy has 120 white blood cells per high power field. What is the most appropriate treatment?

- A. Azithromycin
- B. Ceftriaxone
- C. Cefepime and vancomycin
- D. Nitrofurantoin

**Explanation of correct answer**

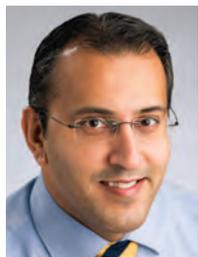
The answer is B. The patient presents with sepsis secondary to a urinary tract infection. Using the anatomic approach, this would be classified as uncomplicated. Using the severity approach, this would be classified as a complicated UTI. With fever, chills, and signs of sepsis, it's likely her infection extends beyond the bladder. Given the severity of her presentation, we'd favor treating her as a complicated UTI with intravenous ceftriaxone. There is no suggestion of resistance or additional methicillin-resistant *staphylococcus aureus* risk factors requiring intravenous vancomycin or cefepime. Nitrofurantoin, although a first-line treatment for uncomplicated cystitis, would not be appropriate if there is suspicion infection extends beyond the bladder. Azithromycin is a first-line option for chlamydia trachomatis, but not a UTI.

## Hospitalist movers and shakers

A season of career transitions

By Matt Pesyna

**Vineet Chopra, MD, MSc, FHM**, recently became chair of the Department of Medicine at the University of Colorado School of Medicine, Aurora. He had previously been the chief of the Division of Hospital Medicine at the University of Michigan Health system. He assumed his new role in October 2021.



Dr. Chopra

Dr. Chopra, who specializes in research and mentorship in patient safety, helped create innovations in care delivery at the University of Michigan, including direct care hospitalist services at VA Ann Arbor Health Care and two other community hospitals.

In his safety-conscious research, Dr. Chopra focuses on preventing complications created within the hospital environment. He also is the first hospitalist to be named deputy editor of the *Annals of Internal Medicine*. He has written more than 250 peer-reviewed articles. Among the myriad awards he has received, Dr. Chopra recently earned the Kaiser Permanente Award for Clinical Teaching at the UM School of Medicine.

**Steve Phillipson, MD, FHM**, has been named regional director of hospital medicine at Aspirus Health (Wausau, Wisc.). Dr. Phillipson will oversee the hospitalist programs at 17 Aspirus hospitals in Wisconsin and Michigan.



Dr. Phillipson

Dr. Phillipson has worked with Aspirus since 2009, with stints in the emergency department and as a hospitalist. As Aspirus Wausau Hospital director of medicine, he chaired the facility's COVID-19 treatment team.

Hackensack (N.J.) Meridian University Medical Center has hired **Patricia (Patti) L. Fisher, MD, MHA**, to be the institution's chief medical officer. Dr. Fisher joined the medical center from Central Vermont Medical Center where she served as chief medical officer and chief safety officer, with direct oversight of hospital risk management,

operations of all hospital-based services, IS services and quality including patient safety and regulatory compliance.

As a board-certified hospitalist, Dr. Fisher also served as clinical assistant professor in the Department of Family Medicine at the University of Vermont, Burlington. Dr. Fisher earned her medical degree from The University of Texas in Houston and completed residency through Forbes Family Practice Residency in Pittsburgh.



Dr. Fisher

**Martin Chaney, MD**, has been chosen by the Maury Regional Health Board of Trustees to serve as interim chief executive officer. He was formerly the chief medical officer at MRH, which is based in Columbia, Tenn. Dr. Chaney began his new role in October, replacing Alan Watson, the CEO since 2012.

Dr. Chaney has spent 18 of his 25 years in medicine with MRH, where most recently he has focused on clinical quality, physician recruitment, and establishing and expanding the hospital medicine program.

**Hyung (Harry) Cho, MD, SFHM**, has been placed on Modern Healthcare's Top 25 Innovators list for 2021, getting recognized for innovation and leadership in creating value and safety initiatives in New York City's public health system. Dr. Cho became NYC Health + Hospitals' first chief value officer in 2019, and his programs have created an estimated \$11 million in savings per year by preventing unnecessary testing and treatment that can lead to patient harm.



Dr. Cho

A member of the Society of Hospital Medicine's editorial advisory board, Dr. Cho is also SHM's hospitalist liaison with the COVID-19 Real-Time Learning Network, which collaborates with the Centers for Disease Control and Prevention and the Infectious Diseases Society of America.

**Raymond Kiser, MD**, a hospitalist and nephrologist at Columbus (Ind.) Regional Health, has been

named the Douglas J. Leonard Caregiver of the Year. The award is given by the Indiana Hospital Association to health care workers whose care is considered exemplary by both peers and patients.

Dr. Kiser has been with CRH for 7 years, including stints as associate chief medical officer and chief of staff.

**Justin Buchholz, DO**, has been elevated to medical director of the hospitalist teams at Regional Medical Center (Alamosa, Colo.) and Conejos County Hospital (La Jara, Colo.). Dr. Buchholz has been a full-time hospitalist and assistant medical director at Parkview Medical Center (Pueblo, Colo.) for the past 3 years. He also worked on a part-time basis seeing patients at the Regional Medical Center.

Dr. Buchholz completed his residency at Parkview Medical Center and was named Resident of the Year in his final year with the internal medicine program.

**Kenneth Mishark, MD, SFHM**, a hospitalist with the Mayo Clinic Hospital (Tucson, Ariz.), will serve on the board of directors for Anigent, a drug diversion-prevention company based in Chesterfield, Mo. He will be charged with helping Anigent better serve health systems with its drug-diversion software.

Dr. Mishark is vice-chair of diversion prevention across the whole Mayo Clinic. A one-time physician in the United States Air Force, Dr. Mishark previously has been the Mayo Clinic's Healthcare Information Coordination Committee chair.

**Core Clinical Partners (Tulsa, Okla.)** has announced it will join with **Hillcrest HealthCare System (Tulsa)** to provide hospitalist services to Hillcrest's eight sites across Oklahoma. The partnership will begin at four locations in December 2021, and four others in March 2022.

In expanding its services, Core Clinical Partners will create 70 new physician positions, as well as a systemwide medical director. Core will manage hospitalist operations at Hillcrest Medical Center, Hillcrest Hospital South, Hillcrest Hospital Pryor, Hillcrest Hospital Claremore, Bailey Medical Center, Hillcrest Hospital Cushing, Hillcrest Hospital Henryetta, and Tulsa Spine and Specialty Hospital.

Continued from previous page

### Back to the case

The case presents an elderly woman with diabetes presenting with sepsis from a UTI. Because of a normal urinary tract and no prior instrumentation, by the AUA definition, she would be classified as an uncomplicated UTI; however, we would classify her as a complicated UTI based on the severity of her presentation. She has a fever, tachycardia, flank pain, and costovertebral-angle ten-

derness that are evidence of infection extending beyond the bladder. She has sepsis warranting inpatient management. Prior urine culture results could aid in determining empiric treatment while waiting for new cultures. In her case, an intravenous antibiotic with broad gram-negative coverage such as ceftriaxone would be appropriate.

### Bottom line

There are multiple interpretations

of complicated UTIs including both an anatomical and severity approach. Clinical judgment regarding infection severity should determine the depth of management.

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# Rural hospitals

Continued from page 1

“And COVID only exacerbated the problems,” she said. “I’ve had my challenges trying to make proper treatment plans without access to specialists.”

It was also difficult to witness so many patients severely ill or dying from COVID, Dr. Mandal said, especially since patients were not allowed family visitors – even though that was for a good reason, to minimize the virus’s spread.



Dr. Mandal

## HM in rural communities

Hospital medicine continues to extend into rural communities and small rural hospitals. In 2018, 35.7% of all rural counties in America had hospitals staffed with hospitalists, and 63.3% of rural hospitals had hospitalist programs (compared with 79.2% of urban hospitals). These numbers come from Medicare resources files from the Department of Health & Human Services, analyzed by Peiyin Hung,

PhD, assistant professor of health services management and policy at the University of South Carolina, Columbia. Hospitalist penetration rates rose steadily from 2011 to 2017, with a slight dip in 2018, Dr. Hung said in an interview.

A total of 138 rural hospitals have closed since 2010, according to the Cecil G. Sheps Center for Health Services Research in Chapel Hill, N.C. Nineteen rural hospitals closed in 2020 alone, although many of those were caused by factors predating the pandemic. Only one has closed so far in 2021. But financial pressures, including low patient volumes and loss of revenue from canceled routine services like elective surgeries during the pandemic, have added to hospitals’ difficulties. Pandemic relief funding may have helped some hospitals stay open, but that support eventually will go away.

Experts emphasize the diversity of rural America and its health care systems. Rural economies are volatile and more diverse than is often appreciated. The hospital may be a cornerstone of the local economy;

when one closes, it can devastate the community. Workforce is one of the chief components of a hospital’s ability to meet its strategic vision, and hospitalists are a big part in that. But while hospitalists are valued and appreciated, if the hospital is suffering severe financial problems, that will impact its doctors’ jobs and livelihoods.



Dr. Simone

“Bandwidth” varies widely for rural hospitalists and their hospitalist groups, said Ken Simone, DO, SFHM, executive chair of SHM’s Rural Special Interest Group and founder and principal of KGS Consultants, a Hospital Medicine and Primary Care Practice Management Consulting company. They may face scarce resources, scarce clinical staffing, lack of support staff to help operations run smoothly, lack of access to specialists locally, and lack of technology. While practicing in a rural setting presents various challenges, it can be rewarding for those clinicians who embrace its autonomy and broad scope of services, he said.

SHM’s Rural SIG focuses on the unique needs of rural hospitalists, providing them with an opportunity to share their concerns, challenges and solutions through roundtable discussions every other month and a special interest forum held in conjunction with the SHM Converge annual conference, Dr. Simone said. (The next SHM Converge will be April 7-10, 2022, in Nashville, Tenn.) The Rural SIG also collaborates with other hospital medicine SIGs and committees and is working on a white paper, “Key Principles and Characteristics of an Effective Rural Hospital Medicine Group.” It is also looking to develop a rural mentorship exchange program.

## COVID reaches rural America

Early COVID caseloads tended to be in urban areas, but subsequent surges of infections have spread to many rural areas. Some rural settings became epicenters for the pandemic in November and December 2020. More recent troubling rises in COVID cases, particularly in areas with lower vaccination rates – suggest that the challenges of the pandemic are still not behind us.

“By no means is the crisis done in

rural America,” said Alan Morgan, CEO of the National Rural Health Association, in a Virtual Rural Health Journalism workshop on rural health care sponsored by the Association of Health Care Journalists.

Mr. Morgan’s colleague, Brock Slabach, NRHA’s chief operations officer, said in an interview that, while 453 of the 1,800 hospitals in rural areas fit NRHA’s criteria as being vulnerable to closure, the rest are not, and are fulfilling their missions for their communities. Hospitalists are becoming more common in these hospitals, he said, and rural hospitalists can be an important asset in attracting primary care physicians – who might not appreciate being perpetually on call for their hospitalized patients – to rural communities.

In many cases, traveling doctors like Dr. Mandal or telemedicine backup, particularly for after-hours coverage or ICU beds, are important pieces of the puzzle for smaller hospitals. There are different ways to use the spectrum of telemedicine services to interact with a hospital’s daytime and night routines. In some isolated locations, nurse practitioners or physician assistants provide on-the-ground coverage with virtual backup. Rural hospitals often affiliate with telemedicine networks within health systems – or else contract with independent specialized providers of telemedicine consultation.

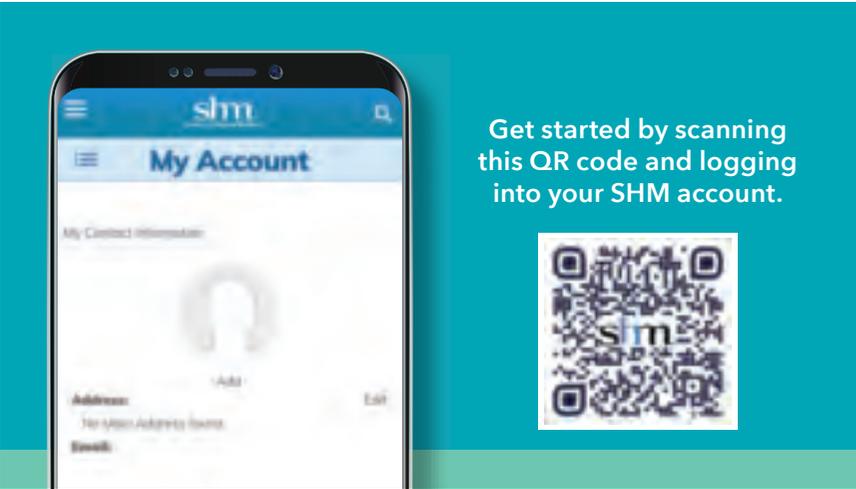
Mr. Slabach said another alternative for staffing hospitals with smaller ED and inpatient volumes is to have one doctor on duty who can cover both departments simultaneously. Meanwhile, the new federal Rural Emergency Hospital Program proposes to allow rural hospitals to become essentially freestanding EDs – starting Jan. 1, 2023 – that can manage patients for a maximum of 24 hours.

## Community connections and proactive staffing

Lisa Kaufmann, MD, works as a hospitalist for a two-hospital system in North Carolina, Appalachian Regional Health Care. She practices at Watauga Medical Center, with 100 licensed beds in Boone, and at



Mr. Slabach



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Cannon Memorial Hospital, a critical access hospital in unincorporated Linville. “We are proud of what we have been able to accomplish during the pandemic,” she said.

A former critical care unit at Watauga had been shut down, but its wiring remained intact. “We turned it into a COVID unit in 3 days. Then we opened another COVID unit with 18 beds, but that still wasn’t enough. We converted half of our med/surg capacity into a COVID unit. At one point almost half of all of our acute beds were for COVID patients. We made plans for what we would do if it got worse, since we had almost run out of beds,” she said. Demand peaked at the end of January 2021.

“The biggest barrier for us was if someone needed to be transferred, for example, if they needed ECMO [extracorporeal membrane oxygenation], and we couldn’t find another hospital to provide that technology.” In ARHC’s mountainous region – known as the “High Country” – weather can also make it difficult to transport patients. “Sometimes the ambulance can’t make it off the mountain, and half of the time the medical helicopter can’t fly. So we have to be prepared to keep people who we might think ought to be transferred,” she said.

Like many rural communities, the High Country is tightly knit, and its hospitals are really connected to their communities, Dr. Kaufmann said. The health system already had a lot of community connections beyond acute care, and that meant the pandemic wasn’t experienced as severely as it was in some other rural communities. “But without hospitalists in our hospitals, it would have been much more difficult.”

Proactive supply fulfillment meant that her hospitals never ran out of personal protective equipment. “Staffing was a challenge, but we were proactive in getting traveling doctors to come here. We also utilized extra doctors from the local community,” she said. Another key was well-established disaster planning, with regular drills, and a robust incident command structure, which just needed to be activated in the crisis. “Small hospitals need to be prepared for disaster,” Dr. Kaufmann said.

For Dale Wiersma, MD, a hospitalist with Spectrum Health, a 14-hos-

pital system in western Michigan, telemedicine services are coordinated across 8 rural regional hospitals. “We don’t tend to use it for direct hospitalist work during daytime hours, unless a facility is swamped, in which case we can cross-cover. We do more telemedicine at night. But during daytime hours we have access to stroke neurology, cardiology, psychiatry, critical care, and infectious disease specialists who are able to offer virtual consults,” Dr. Wiersma said. A virtual critical care team of doctor and nurse is often the only intensivist service covering Spectrum’s rural hospitals.

“In our system, the pandemic accelerated the adoption of telemedicine,” Dr. Wiersma said. “We had been working on the tele-ICU program, trying to get it rolled out. When the pandemic hit, we launched it in just 6 weeks.”

There have been several COVID surges in Michigan, he said. “We were stretched pretty close to our limit several times, but never to the breaking point. For our physicians, it was the protracted nature of the pandemic that was fatiguing for everyone involved. Our system worked hard to staff up as well as it could, to make sure our people didn’t go over the edge.” It was also hard for hospitals that typically might see one or two deaths in a month to suddenly have five in a week.

Another Spectrum hospitalist, Christopher Skinner, MD, works at



Dr. Skinner

two rural Michigan hospitals 15 minutes apart in Big Rapids and Reed City. “I prefer working in rural areas. I’ve never had an ambition to be a top dog. I like the style of practice

where you don’t have all of the medical subspecialties on site. It frees you up to use all your skills,” Dr. Skinner said.

But that approach was put to the test by the pandemic, since it was harder to transfer those patients who normally would not have stayed at these rural hospitals. “We had to make do,” he said, although virtual backup and second opinions from Spectrum’s virtual critical care team helped.

“It was a great collaboration, which helped us to handle critical care cases that we hadn’t had to manage pre-COVID. We’ve gotten used to it, with the backup, so I expect we’ll still be taking care of

these kind of sick ventilator patients even after the pandemic ends,” Dr. Skinner said. “We’ve gotten pretty good at it.”

Sukhbir Pannu, MD, a hospitalist in Denver and CEO and founder of Rural Physicians Group, said the pandemic was highly impactful, operationally and logistically, for his firm, which contracts with 54 hospitals to provide hospitalist staffing. “There was no preparation. Everything had to be done on the fly. Initially, it was felt that rural areas weren’t at as great a risk for COVID, but that proved not to be true. Many experienced a sudden increase in very sick patients. We set up a task force to manage daily census in all of our contracted facilities.”

How did Rural Physicians Group manage through the crisis? “The short answer is telemedicine,” he said. “We had physicians on the ground in these hospitals. But we needed intensivists at the other end of the line to support them.” Conversations about telemedicine were already going on in the company, but the pandemic provided the impetus to launch its network, which has grown to include rheumatologists, pulmonologists, cardiologists, infection medicine, neurology, and psychiatry, all reachable through a central command structure.

Telemedicine is not a cure-all, Dr. Pannu said. It doesn’t work in a vacuum. It requires both a provider on the ground and specialists available remotely. “But it can be a massive multiplier.”

### Critical medicine

Other hospitals, including small and rural ones, have reported taking on the challenge of covering critical care with nonintensivist physicians because the pandemic demanded it. David Aymond, MD, a hospitalist at 60-bed Byrd Regional Hospital in Leesville, La., population 6,612, has advocated for years for expanded training and credentialing opportunities in intensive care medicine beyond the traditional path of becoming a board-certified intensivist. Some rural hospitalists were already experienced in providing critical care for ICU patients even before the pandemic hit.

“What COVID did was to highlight the problem that there aren’t enough intensivists in this country, particular for smaller hospitals,”



Dr. Pannu

Dr. Aymond said. Some hospitalists who stepped into crisis roles in ICUs during COVID surges showed that they could take care of COVID patients very well.

Dr. Aymond, who is a fellowship-trained hospitalist with primary training in family medicine, has used his ICU experience in both fellowship and practice to make a thorough study of critical care medicine, which he put to good use when the seven-bed ICU at Byrd Memorial filled with COVID patients. “Early on, we were managing multiple ventilators throughout the hospital,” he said. “But we were having good outcomes. Our COVID patients were surviving.” That led to Dr. Aymond being interviewed by local news media, which led to other patients across the state asking to be transferred to “the COVID specialist who practices at Byrd.”

Dr. Aymond would like to see opportunities for abbreviated 1-year critical care fellowships for hospitalists who have amassed enough ICU experience in practice or in residency, and to make room for family medicine physicians in such programs. He is also working through SHM with the Society of Critical Care Medicine to generate educational content, such as a critical care lecture series: [www.hospitalmedicine.org/clinical-topics/critical-care/](http://www.hospitalmedicine.org/clinical-topics/critical-care/).

Dr. Mandal, who also works as a pediatric hospitalist, said that experience gave her more familiarity with using noninvasive methods for delivering respiratory therapies like high-flow oxygen. “When I saw a COVID patient who had hypoxia but was still able to talk, I didn’t hesitate to deliver oxygen through noninvasive means.” Eventually hospital practice generally for COVID caught up with this approach.

Throughout the pandemic, she never wavered in her commitment to rural hospital medicine and its opportunities for working in a small and wonderful community, where she could practice at the top of her license, with a degree of autonomy not granted in other settings. For doctors who want that kind of practice, she said, “the rewards will be paid back in spades. That’s been my experience.”

For a complete list of references, see the online version of this article at [www.the-hospitalist.org](http://www.the-hospitalist.org).



Dr. Aymond

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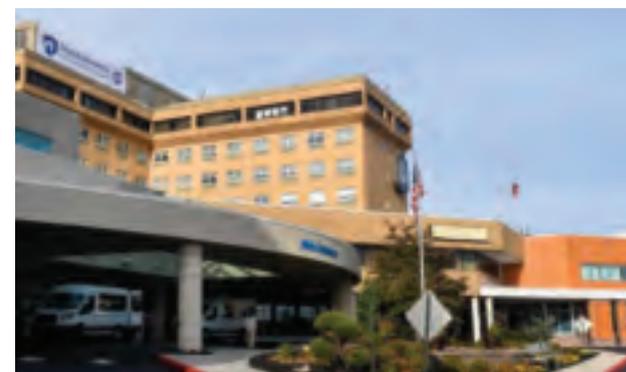
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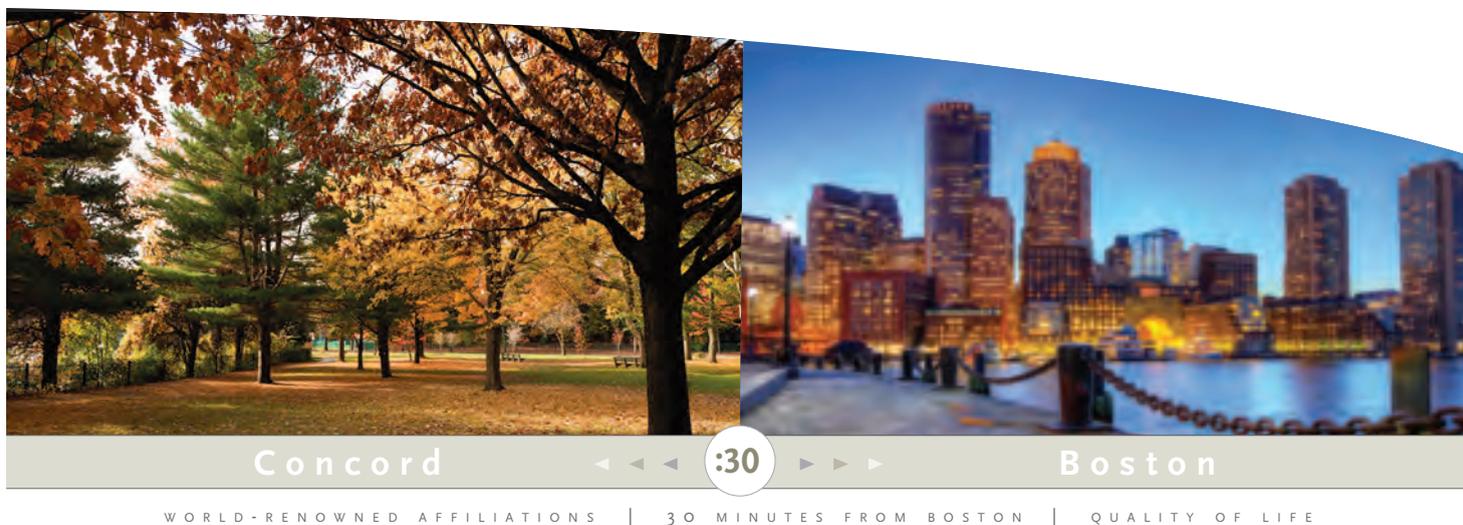
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## Hospitalist Insight

# What does it mean to be a trustworthy male ally?

By Benjamin Kinnear, MD, MEd

*"If you want to be trusted, be trustworthy."*

— Stephen Covey

A few years ago, while working in my office, a female colleague stopped by for a casual chat. During the course of the conversation, she noticed that I did not have any diplomas or certificates hanging on my office walls. Instead, there were clusters of pictures drawn by my children, family photos, and a white board with my "to-do" list. The only wall art was a print of Banksy's "The Thinker Monkey," which depicts a monkey with its fist to its chin similar to Rodin's famous sculpture, "Le Penseur."

When asked why I didn't hang any diplomas or awards, I replied that I preferred to keep my office atmosphere light and fun, and to focus on future goals rather than past accomplishments. I could see her jaw tense. Her frustration appeared deep, but it was for reasons beyond just my self-righteous tone. She said, "You know, I appreciate your focus on future goals, but it's a pretty privileged position to not have to worry about sharing your accomplishments publicly."

What followed was a discussion that was generative, enlightening, uncomfortable, and necessary. I had never considered what I chose to hang (or not hang) on my office walls as a privilege, and that was exactly the point. She described numerous episodes when her accomplishments were overlooked or (worse) attributed to a male colleague because she was a woman. I began to understand that graceful self-promotion is not optional for many women in medicine, it is a necessary skill.

This is just one example of how my privilege as a male in medicine contributed to my ignorance of the gender inequities that my female coworkers have faced throughout their careers. My colleague showed a lot of grace by taking the time to help me navigate my male privilege in a constructive manner. I decided to learn more about gender inequities, and eventually determined that I was woefully inadequate as a male ally, not by refusal but by ignorance. I wanted to start earning my col-

league's trust that I would be an ally that she could count on.

## Trustworthiness

I wanted to be a trustworthy ally, but what does that entail? Perhaps we can learn from medical education. Trust is a complex construct that is increasingly used as a framework for assessing medical students and residents, such as with entrustable professional activities (EPAs).<sup>1,2</sup> Multiple studies have examined the characteristics that make a learner "trustworthy" when determining how much supervision is required.<sup>3-8</sup> Ten Cate and Chen performed an interpretivist, narrative review to synthesize the medical education literature on learner trustworthiness in the past 15 years,<sup>9</sup> developing five major themes that contribute to trustworthiness: Humility, Capability, Agency, Reliability, and Integrity. Let's examine each of these through the lens of male allyship.

## Humility

Humility involves knowing one's limits, asking for help, and being receptive to feedback.<sup>9</sup> The first thing men need to do is to put their egos in check and recognize that women do not need rescuing; they need partnership. Systemic inequities have led to men holding the majority of leadership positions and significant sociopolitical capital, and correcting these inequities is more feasible when those in leadership and positions of power contribute. Women don't need knights in armor; they need collaborative activism.

Humility also means a willingness to admit fallibility and to ask for help. Men often don't know what they don't know. As David G. Smith, PhD, and W. Brad Johnson, PhD, write in their book, "Good Guys," "There are no perfect allies. As you work to become a better ally for the women around you, you will undoubtedly make a mistake."<sup>10</sup> Men must accept feedback on their shortcomings as allies without feeling as though they are losing their sociopolitical standing. Allyship for women does not mean there is a devaluing of men. We must escape a "zero-sum" mindset. Mistakes are where growth happens, but only if we approach our missteps with humility.

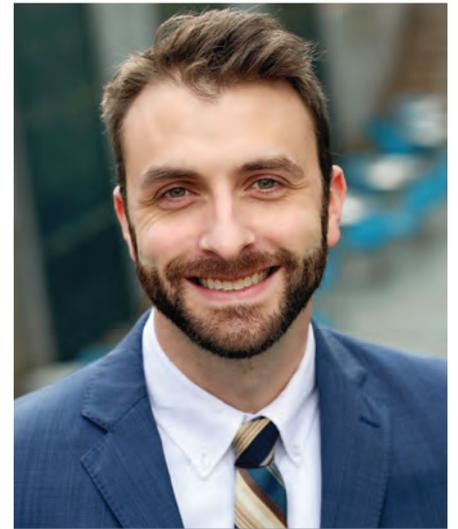
## Capability

Capability entails having the necessary knowledge, skills, and attitudes to be a strong ally. Allyship is not intuitive for most men for several reasons. Many men do not experience the same biases or systemic inequities that women do, and therefore perceive them less frequently. I want to acknowledge that men can be victims of other systemic biases such as those against one's race, ethnicity, gender identity, sexual orientation, religion, or any number of factors. Men who face inequities for these other reasons may be more cognizant of the biases women face. Even so, allyship is a skill that few men have been explicitly taught. Even if taught, few standard or organized mechanisms for feedback on allyship capability exist. How, then, can men become capable allies?

Just like in medical education, men must become self-directed learners who seek to build capability and receive feedback on their performance as allies. Men should seek allyship training through local women-in-medicine programs or organizations, or through the increasing number of national education options such as the recent ADVANCE PHM Gender Equity Symposium. As with learning any skill, men should go to the literature, seeking knowledge from experts in the field. I recommend starting with "Good Guys: How Men Can Be Better Allies for Women in the Workplace"<sup>10</sup> or "Athena Rising: How and Why Men Should Mentor Women."<sup>11</sup> Both books, by Dr. Smith and Dr. Johnson, are great entry points into the gender allyship literature. Seek out other resources from local experts on gender equity and allyship. Both aforementioned books were recommended to me by a friend and gender equity expert; without her guidance I would not have known where to start.

## Agency

Agency involves being proactive and engaged rather than passive or apathetic. Men must be enthusiastic allies who seek out opportunities to mentor and sponsor women rather than waiting for others to ask. Agency requires being curious and passionate about improving. Most men in medicine are not openly and explicitly misogynistic or sexist, but many are only passive when it



*Dr. Kinnear is associate professor of internal medicine and pediatrics in the Division of Hospital Medicine at Cincinnati Children's Hospital Medical Center and University of Cincinnati Medical Center. He is associate program director for the Med-Peds and Internal Medicine residency programs.*

comes to gender equity and allyship. Trustworthy allyship entails turning passive support into active change. Not sure how to start? A good first step is to ask female colleagues questions such as, "What can I do to be a better ally for you in the workplace?" or "What are some things at work that are most challenging to you, but I might not notice because I'm a man?" Curiosity is the springboard toward agency.

## Reliability

Reliability means being conscientious and accountable, and doing what we say we will do. Nothing undermines trustworthiness faster than making a commitment and not following through. Allyship cannot be a show or an attempt to get public plaudits. It is a longitudinal commitment to supporting women through individual mentorship and sponsorship, and to work toward institutional and systems change.

Reliability also means taking an equitable approach to what Dr. Smith and Dr. Johnson call "office housework." They define this as "administrative work that is necessary but undervalued, unlikely to lead to promotion, and disproportionately assigned to women."<sup>10</sup> In medicine, these tasks include organizing

*Continued on following page*

# Identify and empower women leaders

By Heidi Splete

MDedge News

**M**any potential leaders in academic medicine go unidentified, and finding those leaders is key to improving gender equity in academic medicine, said Nancy Spector, MD, in a presentation at the virtual Advance PHM Gender Equity Conference.

"I think it is important to reframe what it means to be a leader, and to empower yourself to think of yourself as a leader," said Dr. Spector, executive director for executive leadership in academic medicine program at Drexel University, Philadelphia.

"Some of the best leaders I know do not have titles," she emphasized.

Steps to stimulate the system changes needed to promote gender equity include building policies around the life cycle, revising departmental and division governance, and tracking metrics at the individual, departmental, and organizational level, Dr. Spector said.

Aligning gender-equity efforts with institutional priorities and navigating politics to effect changes in the gender equity landscape are ongoing objectives, she said.

Dr. Spector offered advice to men and women looking to shift the system and promote gender equity. She emphasized the challenge of overcoming psychological associations of men and women in leadership roles. "Men are more often associated with agentic qualities, which convey assertion and control," she said. Men in leadership are more often described as aggressive, ambitious, dominant, self-confident, forceful, self-reliant, and individualistic.

By contrast, "women are associated with communal qualities, which convey a concern for compassionate treatment of others," and are more often described as affectionate, helpful, kind, sympathetic, sensitive, gentle, and well spoken, she noted.

Although agentic traits are most often associated with effective leadership, in fact, "the most effective contemporary leaders have both agentic and communal traits," said Dr. Spector.



Dr. Spector

However, "if a woman leader is very communal, she may be viewed as not assertive enough, and if she is highly agentic, she is criticized for being too domineering or controlling," she said.

To help get past these associations, Dr. Spector said, changes are needed at the individual, leader, and institutional levels.

On the individual level, women seeking to improve the situation for gender equity should engage with male allies and build a pipeline of mentorship and sponsorship to help identify future leaders, she said.

Women and men should obtain leadership training, and "become a student of leadership," she advised. "Be in a learning mode," and then think how to apply what you have learned, which may include setting challenging learning goals, experimenting with alternative strategies, learning about different leadership styles, and learning about differences in leaders' values and attitudes.

For women, being pulled in many directions is the norm. "Are you being strategic with how you serve on committees?" Dr. Spector asked.

Make the most of how you choose to share your time, and "garner the skill of graceful self-promotion, which is often a hard skill for women," she noted. She also urged women to make the most of professional networking and social capital.

At the leader level, the advice Dr. Spector offered to leaders on building gender equity in their institutions include ensuring a critical mass of women in leadership track positions. "Avoid having a sole woman member of a team," she said.

Dr. Spector also emphasized the importance of giving employees with family responsibilities more time for promotion, and welcoming back women who step away from the workforce and choose to return. Encourage men to participate in family-friendly benefits. "Standardize processes that support the life cycle of a faculty member or the person you're hiring," and ensure inclusive times and venues for major meetings, committee work, and social events, she added.

Dr. Spector's strategies for institutions include quantifying disparities by using real-time dashboards to show both leading and lagging indicators, setting goals, and measuring achievements.

"Create an infrastructure to support women's leadership," she said. Such an infrastructure could include not only robust committees for women in science and medicine, but also support for women to attend leadership training both inside and outside their institutions.

Dr. Spector noted that professional organizations also have a role to play in support of women's leadership. She encouraged professional organizations to tie diversity and inclusion metrics to performance reviews, and to prioritize the examination and mitigation of disparities, and report challenges and successes.

Continued from previous page

meetings, taking notes, planning social events, and remembering to celebrate colleagues' achievements and milestones. Men should take on more of these tasks and advocate for change when the distribution of office housework in their workplace is inequitably directed toward women.

## Integrity

Integrity involves honesty, professionalism, and benevolence. It is about making the morally correct choice even if there is potential risk. When men see gender inequity, they have an obligation to speak up. Whether it is overtly misogynistic behavior, subtle sexism, use of gendered language, inequitable distribution of office housework, lack of inclusivity and recognition for women, or another form of inequity, men must act with integrity and make it clear that they are partnering with women for change. Integrity means being an ally even when women are

not present, and advocating that women be "at the table" for important conversations.

## Beyond the individual

Allyship cannot end with individual actions; systems changes that build trustworthy institutions are necessary. Organizational leaders must approach gender conversations with humility to critically examine inequities and agency to implement meaningful changes. Workplace cultures and institutional policies should be reviewed with an eye toward system-level integrity and reliability for promoting and supporting women. Ongoing faculty and staff development programs must provide men with the knowledge, skills, and attitudes (capability) to be strong allies. We have a long history of male-dominated institutions that are unfair or (worse) unsafe for women. Many systems are designed in a way that disadvantages women. These systems must be redesigned through an equity lens

to start building trust with women in medicine.

## Becoming trustworthy

Even the best male allies have room to improve their trustworthiness. Many men (myself included) have a LOT of room to improve, but they should not get discouraged by the amount of ground to be gained. Steady, deliberate improvement in men's humility, capability, agency, reliability, and integrity can build the foundation of trust with female colleagues. Trust takes time. It takes effort. It takes vulnerability. It is an ongoing, developmental process that requires deliberate practice, frequent reflection, and feedback from our female colleagues.

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