SEPTEMBER 10, 2021 MEDICAL UNIVERSITY OF SOUTH CAROLINA VOL. 37, NO. 19



Unwelcome passenger: Higher hospitalization seen in older patients with NTM bacteria

By Kimberly McGhee

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We are all exposed to nontuberculous mycobacteria (NTM), which are widely found in the environment, including the soil and water. They can even reside in our homes, for example in faucets and shower heads. But most of us don't get sick, because our lungs are healthy and our immune systems strong.

The risk is greater for people with compromised immune systems or damaged airways due to asthma, cystic fibrosis or chronic obstructive pulmonary disease. Damaged lung tissue can be much more easily colonized by NTM bacteria. More than 80%

Preemie returns

Former 24-weeker works

with today's littlest ones.

of patients with NTM lung disease are infected by a particular strain known as Mycobacterium avium complex, or MAC. For reasons not well understood, postmenopausal women are also at higher risk of MAC infection.

MUSC pulmonologist Patrick Flume, M.D., first became interested in NTM lung disease when he noticed that as many as 15% of the patients he was seeing in his cystic fibrosis clinic had the disease. That led Flume, more than a decade ago, to start a monthly half-day clinic dedicated to these patients, one of the first in the nation. As NTM became more common, that clinic expanded and today runs weekly.

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LEED-ing the way SJCH is first hospital in SC to earn LEED certification.

Breakthrough case data offers clues to COVID trends

BY HELEN ADAMS

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Research on breakthrough COVID-19 infections at MUSC Health offers some clues about what's likely happening in the larger community. About 2% of the more than 14,800 fully vaccinated employees and students have had lab-confirmed breakthrough COVID-19 infections so far, but the number is steadily growing. Just two of the breakthrough cases have been bad enough to warrant hospitalization.

"There's a big difference between feeling like you have a cold for a few days from a breakthrough infection versus being on a ventilator if you're unvaccinated. If you don't want to risk being on a ventilator, I suggest you get vaccinated," said Scott Curry, M.D.

"Breakthrough infections are not landing vaccinated people in the intensive care unit unless they're transplant patients or have something seriously wrong with their ability to respond to a vaccine."

Curry, an infectious diseases specialist at MUSC Health and an assistant professor in the Medical University of South Carolina's College of Medicine, has been tracking breakthrough infections since the first documented case in late January of this year at MUSC Health.

They're on the rise as research from the Centers for Disease Control and Prevention suggests immunity from vaccines may decline over time. "Breakthrough cases at MUSC Health have increased exponentially to 70 per week, with no sign of a decrease in sight yet," Curry said.

The average number of days since vaccination in those breakthrough cases was 174. Most of the people in his study had the Pfizer vaccine, but some had

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With the support of the South Carolina Clinical & Translational Research Institute's Research NEXUS, Flume now runs NTM clinical trials to help to identify better therapies for these patients. He also works with NTM experts across the nation to improve our understanding of the disease and the burden it poses, both to patients and to the health care system.

Flume recently collaborated with Rebecca Prevots, Ph.D., of the National Institutes of Health to study Medicare claims data to determine the risk of hospitalization in patients with NTM who



Prevots

are 65 or older. The study, published in CHEST, confirmed what was already strongly suspected – that patients with

BREAKTHROUGH Continued from Page One

Moderna, AstraZenaca or Johnson & Johnson.

The top breakthrough symptoms in

- Curry's research: Headache (67%).
- □ Cough (63%).
- □ Runny nose (63%).
- □ Muscle aches (48%).
- \Box Sore throat (45%).
- □ Fever (44%).
- □ Loss of taste/smell (42%).
- □ Chills (40%).

NTM who have other lung diseases are more likely to be hospitalized. But it also showed for the first time that compared with their age- and sex-matched counterparts without the disease, patients with NTM lung disease were hospitalized 20% more often and a median of 257 days earlier.

Flume and Prevots hope that the study will draw attention to NTM lung disease and the importance of improving its management.

"Our study shows that we're seeing a substantial burden on these patients and the health system as manifested by hospitalizations," said Flume. "So, it just gives us more evidence that we need to try and be better at identifying these patients and treating them earlier and more effectively."

"Knowing how often patients with this condition are hospitalized allows us to measure the economic and social impact of this condition on our communities and to advocate for early detection and better treatment as well as to further research on prevention strategies." said Prevots.

Patients with NTM lung disease can go

But Curry said those symptoms usually

didn't stick around long. "One of the

most of these folks are really high in

terms of their viral load at infection

quickly compared to unvaccinated

well enough to work again."

onset, but they seem to get better very

patients. Patients seem to be sick for a

day or up to five days, and then they feel

things we are seeing qualitatively is that

□ Hoarseness (35%).

Diarrhea (20%).

years without a diagnosis because their symptoms – lingering cough, fatigue, fever, weight loss and sweats – are not recognized or are attributed to different diseases.

"By the time they come to us with a diagnosis, they've often been treated multiple times with antibiotics for respiratory symptoms before they finally figure out they've got MAC," said Flume.

Once diagnosed, patients are put on a regimen of three to four antibiotics for many months, during which time sputum is cultured again to see if the infection has been cleared. Even after infection clearance, patients continue on antibiotics for an additional year.

"So we try to get someone to culture negativity and then treat them for a year past that," said Flume. "In the NTM clinical trials I run, we're trying to figure out if there are better regimens or even shorter regimens."

Flume is planning to team up with Prevots again on two new projects. Together with Stephane Meystre, M.D., Ph.D., of the Biomedical Informatics Center at MUSC, they will analyze data for patients with NTM lung disease

His research does not include people with asymptomatic breakthrough infections or cases so mild that they don't bother to get tested. "There could be many more less–symptomatic breakthrough infections out there, but the few we've documented so far have barely detectable virus. It's not clear we need to care as much about very mild infections because the transmission potential for those infections is unclear, and making people less sick is what we want the vaccine to do to begin with."

Curry said one factor helping to fuel the breakthrough infections he is are seeing is the high COVID rate in South Carolina. The state recently ranked worst in the country for cases per capita, and its vaccination rate put it 41st in the country as of Sept. 7.

"The risk of breakthrough is completely predicated on the external pressure of COVID out there. If we lived in a low incidence state, then we would see the vaccines become substantially more effective. But we live in a highly unvaccinated state where COVID is ripping through like a wildfire. And no taken from the electronic health record and will work to set up a national NTM lung disease patient registry, which will help researchers to learn more about the disease and develop more effective therapies.

Flume thinks that early diagnosis is key to a better quality of life for these patients and to reduced rates of hospitalization. He encourages physicians to consider NTM infection in patients, particularly patients with other lung diseases, who show symptoms, such as a lingering cough, fatigue and fever that do not improve with antibiotics.

"We're trying to communicate to docs to at least put this in their thought process," said Flume. "When your patient is having persistent respiratory symptoms, is it possible he or she could be having this type of infection? If we identify them earlier, then we can intervene earlier and make a difference in their lives.

To learn more about the NTM care team at MUSC Health, schedule a visit or refer a patient, visit https:// muschealth.org/medical-services/lungcare/ntm.

matter how much fireproof gear you wear, you're going to get burned if you run into a wildfire," Curry said.

As for whether booster shots for everyone are part of the



solution, Curry wants to see more data before deciding. "Everybody seems to take this leap of faith that a booster shot would have prevented all the breakthrough infections we've observed so far. We have no evidence to that effect yet," he said.

"I want to see a trial done where people whose immune systems work well get three doses at some predetermined schedule and compare them to people who've had two doses to see if that one group gets less sick than the other. That's really the gold standard of what we want to see."

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'We need to change our thinking' to keep schools open amid Delta surge

BY HELEN ADAMS

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Allison Eckard, M.D., works with school districts in and around the Lowcountry to try to help them protect

students and staff as the Delta variant drives up case numbers. But in just the first couple of weeks, the Charleston County School District alone racked up about 700 cases. In neighboring



Eckard

Berkeley County, they've had more than 1,000.

"The virus is out of control," the infectious diseases specialist at MUSC Children's Health said. "At this point, you have a variant that is maybe 90% more infectious than the original strain. You have so many more cases at school, you have fewer children wearing masks and children are less spaced apart than they were last year. This is a recipe for disaster in terms of an exponential growth of cases among school-aged children. And we are seeing that."

Eckard, who also serves as medical director for MUSC Health's Back2Business program for schools, said she's working closely with individual schools to give them real-time advice – and hears how worried their leaders are. "Many private schools and school districts are coming to me saying that they are seeing case numbers like they've never seen before, and they're on the verge of closing."

Part of the problem is that they're having trouble contact tracing in some cases because the overall numbers are so high, she said. And when the schools do try to contact trace, it doesn't always go smoothly. Ellen Nitz, director of nursing services for the Charleston County School District, said people are tired of COVID – and it shows.

"Last year, when we started our contact tracing, families would say, 'Thank you so much. We really appreciate what you're doing, thanks for keeping everybody safe.' And now when we tell someone that they have to quarantine or even isolate, we get some feedback from our families, saying they're tired of this and their kids need to be in school," Nitz said.

That pushback is happening as the Tri-county area hits its highest COVID case numbers of the pandemic. Eckard said it's time for more families to take the situation seriously.

"We need to change our thinking now, for a short period of time. This isn't going to last forever. The Delta surge is expected to peak by middle or late September. So we're not talking about wearing a mask for the next 12 months. We're talking about altering your behavior and stepping up what you do as an individual and as a family, maybe for the next couple of months, that's it," Eckard said.

"One of the biggest problems is that people are continuing to do their normal activity outside of school. It's very high risk — sleepovers, parties, sports, travel. Those are all contributing to an increase in numbers, along with low vaccination rates and the pushback against wearing masks in school or out in public."

Nitz agreed. "If everybody out there would do their part and stay socially distant, wear their masks and stay home when they're not feeling well, that would make a huge, huge difference."

That could not only help keep schools open, but also keep more kids



Image by iStock

Most kids fare better when they attend school in person.



"If everybody out there would do their part and stay socially distant, wear their masks and stay home when they're not feeling well, that would make a huge, huge difference."

from ending up in the hospital. "We have seen more ICU admissions and children on ventilators than the entire rest of the pandemic combined. It is Ellen Nitz

awful," Eckard said. "I wish more people would recognize the seriousness of the situation."

You're fully vaccinated, but



Former preemie returns to campus of her birth to help other tiny newborns

By Helen Adams

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When Ashley Yoh first arrived at MUSC Children's Hospital in 1986, she was a tiny, fragile baby, born at just six months gestation after a head-on collision caused her mother to start hemorrhaging. Yoh spent four months in the hospital's neonatal intensive care unit, growing and getting strong enough to go home.

Today, Yoh is a cheerful, confident surgical tech, working with preemies as vulnerable as she once was, in the MUSC Shawn Jenkins Children's Hospital.

"It's still surreal to me that I am here at MUSC and helping at the same place where I was," she said.

Yoh's remarkable journey from preemie to health care professional came up during a conversation with pediatric neurosurgeon Ramin Eskandari. "I've known her for a while," he said. "What I always remembered about her is that literally she's smiling and laughing no matter what's going on."

"Whenever I work with surgeons, I like to make small talk," Yoh said.

And that's what she was doing one memorable day. "We rolled the patient in -a little preemie baby with intraventricular hemorrhage. That's bleeding that has caused the brain to be under pressure. So we were implanting a little device that we can remove the fluid from their brain with, intermittently," Eskandari said.

"The baby was a 24-weeker," Yoh said. "So I was asking Dr. Eskandari about the patient. And then, I was like, 'Well, fun fact. Back in the '80s, I was actually born at six months gestation, and I lived at MUSC for about four months."

"To think that almost 30 years ago, that she would have been born 24 weeks and is now thriving is quite impressive," Eskandari said.

"That's amazing. It literally stopped me in my tracks, so to speak, and I couldn't believe it. And I said, 'Where were you born?' And she said, 'Right here.' And I said, 'There's no way, are you kidding me? This is so cool that you're here helping a patient that's a 24week preemie baby. And you were a 24-week preemie.' Back then, survival was actually questionable."

Yoh said treatments for preemies have advanced dramatically since then. "It's so funny because when I look back on it, when I was born, they actually had these rubber gloves inside the incubators. People were only allowed to touch the babies with rubber gloves. There was no skin-to-skin contact, because they were so afraid of germs and infections. Medically, we have



Photo by Sarah Pack

Dr. Ramin Eskandari and surgical technician Ashley Yoh were taking care of a baby when she told the surgeon something that amazed him.

"I would just definitely tell them to trust Jesus and trust your medical staff and know that there are people like me out in the world that made it 35 years ago. And your child can have a fulfilled, loving, healthy life."

Ashley Yoh Surgical tech and former preemie

come so far, technology-wise."

Today, the neonatal intensive care unit in the MUSC Shawn Jenkins Children's Hospital serves newborns from throughout the state as a designated regional perinatal center. It's one of two sites in South Carolina that offer heart-lung bypass for babies with severe cardiorespiratory failure.

"We've gotten a lot of evidence in the literature over the years of how best we can manage these babies. So we're trying to utilize that evidence, including the evidence from our own research labs," Eskandari said.

"Our protocol is very different than what a lot of other places do. We tend to be more aggressive upfront with the babies' treatment. We found that the earlier

you do certain procedures, the better the chance they'll have good long-term outcomes."

Yoh wants the parents of other preemies to know that good things can lie ahead. "Please don't ever give up. Just fight with everything that you have and trust the medical path," she said.

"Medicine has come so far and there are so many high-tech, innovative things out there that can help your child. The survival right now for premature babies is so much higher than it was back in the '80s. I would just definitely tell them to trust Jesus and trust your medical staff and know that there are people like me out in the world that made it 35 years ago. And your child can have a fulfilled, loving, healthy life."

MEET SARA



Sara Ritchie, M.D.

Department; Years at MUSC MUSC Health Department of Pediatrics; 10 years total four years as a medical student, three years as a pediatric resident and three years as an attending physician.

How are you changing what's possible at **MUSC**

I will be a pediatrician at the new Summey Medical Pavilion Primary Care Clinic, which opens this month. I'm looking forward to seeing how we grow and develop this clinic!

Family

Husband, Joe; and sons, Lucas, 4.5 years old and Will, 3.

Who inspired you to work in health care

My parents are physicians -My mom is a local dermatologist (Dr. Marta Hampton) and my father was an infectious disease specialist at Roper Hospital for decades.

A woman who inspired you

My grandmother and mother emigrated from Nicaragua with their family in the early 1930s.

Greatest moment in your life *My children are part of the COVID–19* Moderna vaccine dosing trial.

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The University Human Resources Department will be hosting a Virtual Benefits Fair the week of September 27th-October 1st, 2021.

The fair will include free live webinars with several vendors including AFLAC, AIG, Empower Retirement, Metlife, MUSC Weight Management Center, TIAA and The Standard. Webinars will be held from 9am to 4pm EST. We will also have recorded webinars available for viewing in MyQuest.

Employees are encouraged to attend webinar sessions during the week of the fair to learn about plan changes effective January 1, 2022 retirement preparation and vendor product offerings.







What's Next for Telehealth? Addressing concerns from policymakers

Please join us for a virtual Health Policy Sympos featuring policy and legal experts from the Center for Telehealth and e-Health Law (CTeL).

CTeL is a leading source of legal, regulatory, and policy intelligence for the telehealth community. The Symposiu will offer perspective on the end of the COVID-19 national gublic health emergency, the likelihood of legislative action by Congress and the articipated direction of the Centers for Medicare and Medicaid Services on reimbursement for virtual care.

Our Health Policy Symposium speakers have served in senior staff positions in the legislative and executive branches of government. They will provide insight into policymakers' concerns surrounding telehealth and CTeL's strategy for addressing common n to advance telehealth delivery.

This virtual event is hosted in coordination with the South Carolina Telehealth Alliance and the MUSC Center for Telehealth. MUSC telehealth experts will participate in Q+A to provide institutional context and state policy

With questions, please contact Allie Dodd doddatkroune adu

perspective.



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Wednesday, September 29 | 2:00 - 3:00 p.m. Virtual event, registration required https://redcap.link/PolicySymposium202

Changing What's Possible

MUSC SJCH first hospital in S.C. to be awarded LEED certification

By Leslie Cantu

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MUSC Children's Health leaders are celebrating silver – specifically, the LEED Silver certification for MUSC Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion.

The recently bestowed designation makes SJCH&PTWP the first comprehensive, built-from-scratch hospital in South Carolina to achieve LEED certification, a status that indicates the building meets specific environmental and sustainability goals. LEED stands for "leadership in energy and environmental design."

There have been medical office building construction and renovations in the state that have achieved LEED status, said project designers from Perkins+Will, but until now no hospitals. Hospitals, with their intense energy and water usage, have a harder time meeting LEED goals than a typical office or retail building.

Despite the challenge, achieving LEED status was a core component of the architectural design from the initial planning stages, said Mark Scheurer, M.D., chief of Women's and Children's Services. South Carolina requires statefunded buildings larger than 10,000 square feet to comply with either LEED or Green Globes, another "green" building certification. It was a goal that MUSC Children's Health gladly accepted.

The building is a physical manifestation of MUSC's commitment to improving the health of all South Carolinians. Not only is there physical healing occurring within the building, but the building itself contributes less pollution and consumes less resources than similar non-LEED-type facilities, thereby reducing its impact on the environment and the health of humans who breathe the air and must deal with the disruptions of climate change.

"Pursuing LEED certification advanced our commitment to sustainability in our buildings and furthered our commitment to creating environments for our care team and patients that take the best from the environment and introduce them into the building," Scheurer said.

Randy Maxwell, project designer with Perkins+Will, said LEED considers the totality of a project from the macro – how well it fits into its surroundings and responds to local environmental factors, like flooding or hurricanes – to the micro, like the types of adhesives and sealants used.

Much of it has to do with how the building lessens stressors on the people inside; for example, by reducing glare from the sun. He also pointed out that the designers challenged themselves to create a building in such a way as to be sensitive to those on the autism spectrum by reducing noise.

Acoustic echoes, sudden noises and loud noises are known as triggers to children on the autism spectrum, said project designer Aiko Tanabe.

"It's not helpful for children on the spectrum, but in general, nobody likes echoes or being stuck in a loud room with echoey surfaces," she said.

Acoustic environment is also part of LEED certification, so designers ensured that sound-absorbing finishes were used.

The designers also considered impact on people when they chose the floors. Vinyl is popular in health care settings because it can stand up to stringent cleanings, but vinyl comes with the offgassing problem – that "new car smell" that some enjoy but actually consists of volatile organic compounds that can cause reactions in some people. Instead, most of the floors in the hospital are linoleum, an old-school flooring that's made of renewable resources.

When the building was first planned, LED lights were used in about half of her projects, Tanabe said. The other projects she was working on used fluorescent lights.

"MUSC had the foresight to say, 'By the time this is done, LED is probably going to be mainstream' – which it is completely, 100% right now. And LED uses so much less power," she said. Further, the design team worked to

See LEED on page 11



Photos by Brennan Wesley

MUSC Shawn Jenkins Children's Hospital and Pearl Tourville Women's Pavilion is the first comprehensive, built from-the-ground-up hospital in the state to achieve LEED status, according to designers Perkins+Will.



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'It's a wonderful opportunity to tinker'

By HELEN ADAMS

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For a field that's heavily invested in technology, dental medicine has a surprising problem. The plastic teeth used to teach future dentists, well, kind of bite. That's definitely an overstatement, but they could use some tweaking, says dentist Anthony Mennito, D.M.D. He's an associate professor in the College of Dental Medicine at MUSC.

"When I was in dental school, we were taught how to work on teeth using these fully intact plastic teeth. And they look like teeth, but they don't feel like teeth. They're really nothing like teeth, other than the shape of them. Fast forward to the present, and we're still using this same technology," Mennito said.

"But when you go to the dentist,

there's a problem with a tooth, right? There's either a cavity or the tooth is broken, or something is going on that requires an intervention. So, I wanted to come up with a way to make teaching our students in a way that's more clinically relevant to what they'll actually face when they start seeing their own patients."

A colleague told Mennito that MUSC was launching a Faculty Innovation Fellowship program to support advances in teaching, backed with financial support of \$10,000. He applied for and got a fellowship.

"I knew my goal was to 3D print teeth. The first thing I had to do was create a three-dimensional file that was a prototype of a tooth that I could manipulate," he said.

He built in defects that felt real and plans to keep honing his invention. "It's



Mennito

a wonderful opportunity to tinker. We're not answering huge questions with this, but maybe finding the first couple of steps of a solution to a problem."

Martin

Mennito was one of six faculty members selected as Faculty Innovation Fellows in the first cycle. They're in a remarkable range of areas, from neuroscience to nursing.

Like Mennito, Rachel Penrod Martin, Ph.D., wanted to improve student learning – in her case, in the College of Graduate Studies, which trains



Meyer

"I am very interested in neuroscience education. One of the things that's come up year after year — and was part of my own experience — is how difficult neuroanatomy is. It's really hard to imagine 3D structures from 2D pictures. It makes the whole experience feel sort of inaccessible to students," Martin said. "Oftentimes they don't pursue work in those more systems-level things, because it feels so hard to work with."

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MUSC Health opens new monoclonal antibody infusion site in West Ashley

By Leslie Cantu

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With a rising need for early-stage treatment during the Delta-driven surge in COVID-19 cases, MUSC Health-Charleston Division has opened a new monoclonal antibody infusion site at Citadel Mall in the West Ashley area.

The site is capable of infusing 64 patients each day.

Monoclonal antibodies are labproduced antibodies that are given to a person intravenously to help ward off serious illness. The treatment has emergency use authorization from the Food and Drug Administration, but it must be given within 10 days of symptoms showing up – and the sooner the better. "We've been doing this since November 2020, so we have a lot of experience and have seen really good effects," said Vanessa Diaz, M.D., associate chief medical officer for MUSC Physicians.

She said that clinical trials so far have been promising, showing a more than 60% reduction in people who end up hospitalized. The South Carolina Department of Health and Environmental Control estimates that 2,000 people have avoided hospitalization, and 200 deaths have been averted, due to monoclonal antibody treatment.

Since November, MUSC Health has used monoclonal antibodies with about 2,500 patients across all of its divisions. That number is likely to



Photo by Leslie Cantu

The new monoclonal antibody infusion site can serve 64 patients per day. It is in Citadel Mall, but the entrance is separate from the rest of the mall and from MUSC Health West Ashley Medical Pavilion.

increase substantially during this surgeDiaz said that, including all healthcare providers throughout the state,

about 2,000 people each week in South

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Doctor's greatest fear, full FDA approval and vaccine information

By Bryce Donovan

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Breakthrough cases of COVID have been a hot topic lately. Sure, when it comes to news, people tend to be drawn to the unusual or the one-off, but the truth is breakthrough cases of COVID that lead to serious health issues are still quite rare.

How rare? According to the South Carolina Department of Health and Environmental Control, the odds of someone who's been fully vaccinated getting COVID and ending up in the hospital are around 1 in 6,000 – or 0.02%. So, yeah. Super slim. But let's take that unlikely scenario a step further. The odds of that same person getting COVID, becoming hospitalized and then dying? A mere 0.004%, or roughly the same likelihood they'll be attacked and killed by dogs while out

on a walk.

"It's just such a low percentage chance that someone who is fully vaccinated will get seriously ill with COVID,' said Danielle Scheurer, M.D., MUSC Health System chief quality officer, who oversees all things vaccine for the hospital system. "Every time it happens, it's newsworthy, sure, but it's nowhere on the scale of what we're seeing with the unvaccinated population."

Scheurer said vaccines were created to prevent serious disease, not be bulletproof. And this one is no different. "We never thought it would completely prevent COVID," she said, "but the breakthroughs are still way less severe than native infections."

With the vaccine landscape still in a state of flux, we are periodically checking in with Scheurer to ask her the most pertinent questions that are hanging in the balance.



iStock photo

Statistically, a person is more likely to be attacked and killed by dogs than to die from COVID after being fully vaccinated.

What you need to know about the COVID-19 vaccine - Part 9

Danielle Scheurer, M.D., MUSC Health System's chief quality officer, weighs in on issues related to COVID-19 and vaccinations.

Q. Can people get the booster at MUSC now? How do they do that?

A. Yes. And the drill is exactly the same as the first time around. The people who are eligible now are those that are immunosuppressed (from a disease or a medication). Soon to come will be the ones who were first to receive the original vaccine – health care providers, residents of long-term care facilities and older adults will likely be eligible by mid-September. To schedule a booster, patients can work through MUSC Health's MyChart or simply call 843–876–7227 to set up a time.

(NOTE: If you are receiving a third dose of the vaccine but your first or second doses are not documented in MUSC Health's system (MyChart), we request that you bring your valid vaccine card with you to your appointment.)

Q. Are some of these breakthrough cases/variants more dangerous or are they simply more contagious?

A. Everything is Delta now. Right now, 98% of all of our cases are Delta. Yes, you're more likely to have a breakthrough with this variant than the ones before. But that's how mutations work. The variants that stick around the longest are usually the nastiest ones. I've always said that this is a race against the variants. The longer it takes us all to get vaccinated/immune, the more likely it is for this virus to beat the vaccine. It's super frustrating to think that we're still talking about this in August of 2021. Many people just won't get vaccinated.

Q. If you feel crummy but you're vaccinated, should you get tested? A. Absolutely, yes.

Q. How easy is it to get tested still? And is it free?

A. Symptomatic testing is still covered. The governmental and private payers are picking up the tab for this, so there's no reason not to get tested if you think you might be showing symptoms. If patients come to us to get it done, we are still using PCR tests – these are hands-down the most reliable ones out there – and turnaround time is usually within 24 hours.

Q. How worried should we be for our kids right now? How likely are we to pass the virus to them?

A. I think, all told, the actual risk to an individual child getting very sick with COVID is still very, very small. Of all the pediatric patients we see at MUSC Children's Health, we've only seen 180 hospitalized COVID cases since the pandemic began nearly a year and a half ago. In that time, we've only seen 30 cases of multisystem inflammatory syndrome in children (MIS-C), which is one of the main ways the virus manifests itself in kids. And of those 30, none of them were vaccinated – of course, some weren't because they are too young – but still, kids getting really sick from COVID is still thankfully rare. That said, I think we'd all feel better if we could get our younger kids vaccinated, because one hospitalized child is too many.

Q. Any guesses as to when the vaccine will be available for the 11-year-old and younger group?

A. Realistically, I think we're looking at winter. End of calendar year, first of next.

Q. As a doctor, what scares you the most about the pandemic?

A. I'd say it's the inability to help patients to make good health care decisions based on science. Because there's no way for me to combat that problem. There is no solution outside of mandates. That honestly scares me the most – that there is the belief that the vaccine is unsafe to the point that people will go to great lengths to avoid it. And there's no data that I can show them that will change their minds. In the early days, we were hopeful that with solid data and spreading the word that we would be able to overcome this hesitancy, but it didn't work out that way, and now we're coming up on nine months since the vaccines were released, and only 1 in 2 Americans are vaccinated. Also, I can't help but to think, "What is the next mutation going to do?" We're giving this thing way too much time to mutate. **Have a question you'd like answered? Email it to donovanb@musc.edu with the subject line "Vaccine Q."

INNOVATORS Continued from Page Seven

She believed virtual reality could help change that. "Virtual reality is an opportunity to translate some of these 2D images into a 3D space where students can interact with and see the connections between different neuroanatomical structures."

Martin reached out to Karen Schloss, Ph.D., at the University of Wisconsin's Institute for Discovery. Schloss had already created virtual reality lessons, and Martin wanted to know if she could use the Madison scientist's program as the foundation for a study at MUSC on whether virtual reality could help students in Charleston. Schloss agreed. Then COVID hit.

"I think it's slowed down my ability to recruit new people. It also changed the way I was administering the project. So originally, students were going to be able to take the VR units home and use them in their own setting. And ultimately, you know, because of technical and COVID issues, that got shunted into come to a one-on-one thing: We'll walk you through it; you'll do the assessment, you know, one person at a time," Martin said.

She's not giving up. In fact, her vision has expanded. "I still have all the equipment. I'm interested in the next school year in trying to recruit via anatomy labs or other courses where there's a mixture of students from different colleges. I think, and this is something that I've talked about with the Office of Innovation and the Education Innovation Cabinet, that this potentially has utility across colleges."

Faculty innovator Ted Meyer, M.D., Ph.D., is trying to solve a different puzzle with his fellowship: how to quantify what makes a surgeon good. He directs the Otolaryngology Residency Program at MUSC, working with new doctors as they gain experience.

"When people say, 'Well I know what a good surgeon is.' OK, maybe you do. But how do you know that? What's the formula that you follow to help Dr. Smith or Dr. Jones through a surgical residency? How do you get him or her to be better?" Meyer said.

"We really need to train the next



generation of surgeons to be better than

us. So the project is based on recording

what we do in the operating room, then

making physical measurements. We've

done that with some publicly available

very time consuming. So that's where

in artificial intelligence or machine

what were having to do manually."

called a supercomputer, which the

MUSC award funded. "You need to

have a whole bunch of information

to analyze what's going on with our

instruments while we are operating."

The goal is to use the system in

faster. Its value may go well beyond

residency training to improve patient

care and help surgeons work better and

MUSC. "We are discussing whether to

push something to market or pair with

an external entity that's already doing

Advanced practice registered nurse

professor in the College of Nursing, used

her fellowship award to solve a COVID-

driven crisis. Her innovation may benefit

students and faculty for years to come,

can go on even when a virus makes in-

Her students do much of their work

online but come to campus about four

March of 2020, we had students set to

come to MUSC. Everyone had airplane

on campus. But the pandemic meant a

tickets -one group had already shown up

times a year for clinical training. "In

because it showed nursing education

Angela Stanley, D.N.P., an assistant

similar sorts of things."

person training tricky.

lot of clinics were closing."

from videos and use it to train a model

software, but it's not automated and it's

we've taken the innovation path to bring

learning to try to train a program to do

For that, they needed what Meyer

Stanley



Thomas

McManigle If the nurses couldn't get that clinical training, she was afraid they'd have to

If the nurses couldn't get that clinical training, she was afraid they'd have to take leaves of absence or withdraw from the program. "So we said, 'We've got to work smarter, not harder.""

A brainstorm with the assistant dean for graduate practice programs in the College of Nursing led to the realization that they could try telehealth for part of the nurses' training to reduce the time they'd spend in contact with patients who, like everyone else at the time, were unvaccinated.

She used the fellowship funding to pay for a two-week, online telehealth certification course for all the nurse practitioners, faculty and students who needed it. Then, they put it into practice. "It worked. They were able to get firsthand clinical experience, speaking not only to the patient, but also speaking to the preceptor and learning how to use the telehealth cart," Stanley said.

"It was an awesome experience. To know that if have a situation like this happen again, even if it's isolated to a single clinic, that clinic can still run. They can switch to telehealth if need be without so much concern about that impacting their progress or their knowledge or understanding of concepts."

The final fellowship went to a duo from the College of Medicine who wanted to get more students trained in how to do ultrasounds. Assistant professors Meghan Thomas, M.D., and Bill McManigle, M.D., say the technology may be best known for pregnancy and heart exams, but its use is expanding quickly.

"A lot of internal medicine specialties, along with emergency medicine, have progressed in using point-of-care ultrasound as a diagnostic tool to aid the physical exam and improve diagnostic accuracy. They can also help avoid more expensive testing, such as CT. It's a really cheap and easy way to evaluate a patient at the bedside," Thomas said.

Ultrasounds generate sound waves to let doctors see the body's internal structures. "Ultrasound, in general, is kind of a newer technology for specific internal benefits. And so there's not a lot of faculty that are trained in ultrasound," Thomas said.

That's where ultrasound simulation training, partly funded by the MUSC fellowship, came in. With the help of the Department of Veterans Affairs in Charleston, which had the needed technology, Thomas and McManigle got students to try the simulation and give feedback.

"The students really love it. It's really rewarding to see students learn something that's new and innovative – something that they can be a part of."

The next group of Faculty Innovation Fellows will be notified in early September that they've been accepted. You can find out more about the program on its web page. The program is facilitated by Jesse Goodwin, Ph.D., the chief innovation officer in the Office of Innovation, in collaboration with Lisa Saladin, P.T., Ph.D., executive vice president for Academic Affairs and provost, and Gigi Smith, R.N., Ph.D., associate provost for Education Innovation and Student Life.

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LEED Continued from Page Six

choose light fixtures and place them so that rooms had enough light without being blasted by brightness.

Although the hospital has been in use since February 2020, leaders learned only this summer that it had earned LEED certification. Christine von Kolnitz, sustainability and energy manager for the MUSC Health Charleston–Division, said that the U.S. Green Building Council, which administers LEED, wants to see that buildings are actually functioning in the sustainable manner that was promised through the design process before awarding certification.

Chris Oh, senior project architect with Perkins+Will, said it took the efforts of more than 30 people, including designers, contractors, MUSC project managers and on-site construction managers, to keep the project on track to earn LEED certification.

Scheurer credited MUSC project

Among the items that helped the building to achieve LEED certification:

The building reduces domestic water use by 37% and industrial water use by 54%. This is achieved through a combination of low-flow fixtures, use of recycled water or closed-loop cooling systems for medical and industrial equipment and use of rainwater or the condensation from HVAC systems to water the grounds.
 The project maximizes open space by ensuring that open space is equal to or greater than

managers Gopi Omraju and John Sion for leading SJCH&PTWP to LEED.

"They kept us on task and led us down the pathway to creating choices that allowed us to get to LEED, and the footprint of the building and furthermore uses native plants or plants adapted to the local environment.
The building has an energy cost savings of 8.5%.
As measured by value, more than half of the building materials are sustainably sourced.
During construction, more than 90% of waste materials were diverted from landfills.

they never swayed from that," Scheurer said. "They and Perkins+Will did a great job of finding pragmatic solutions that were keeping in the LEED certification categories."



CULTURALLY SENSITIVE CARE WORKSHOP Addressing the Healthcare Needs of the LGBTQIA+ Community Friday Oct. 1st and 8th, 2021 12:00pm – 4:00pm EST

Save the date for the 4th Annual MUSC Culturally Sensitive Care Workshop! This year's theme this year is "Addressing the Healthcare Needs of the LGBTQIA+ Community." Contact Dr. Cristina Reyes Smith for more information at: smithcris@musc.edu.

INFUSION Continued from Page Eight

Carolina are receiving monoclonal antibodies.

She noted that the FDA eased the eligibility guidelines, meaning that more people now qualify for monoclonal antibody treatment.

"I believe they expanded the criteria because what they saw was good effectiveness with very little side effects," she said.

Eligibility now includes:

□ People over age 65.

People who are overweight with a BMI over 25.Pregnant women.

People who are high risk due to preexisting conditions, including diabetes; chronic kidney, heart or lung disease; or a weakened immune system.

Children over the age of 12, as long as they weigh at least 88 pounds, can receive the treatment. Diaz said the infusion team works with the pediatric infectious disease team to oversee this treatment for children.

Both vaccinated and unvaccinated people can receive the treatment, but there are a couple of important points to keep in mind. First, vaccinated people may see less of a benefit because they already have antibodies circulating.

Second, unvaccinated people should still get the vaccine.

"We recommend vaccination about 90 days afterward because monoclonal antibodies are not antibodies that are going to stay in the body forever. They are going to



Photo by Andrew Trolley

MUSC health staff members walk through the site before it opened.

get broken down, and you really need to have your own antibodies," she said.

The new West Ashley site is inside the mall, in the former Tattooed Moose location. Patients must have a

referral from a health care provider; this is not a walkin site. Community health providers can refer patients for the treatment through the MUSC Health website.

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