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30TH ANNIVERSARY OF THE ADA

ILRU SUPPORTS INDEPENDENT LIVING DURING COVID-19

TIRR MEMORIAL HERMANN Rehabilitation & Research

COVER STORY

Lex Frieden is professor of health informatics in the School of Biomedical Informatics and professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth, and is adjunct professor of physical medicine and rehabilitation at Baylor College of Medicine. He directs the ILRU program at TIRR Memorial Hermann.

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FEATURE

On the 30th Anniversary of the ADA, Lex Frieden continues to advocate for change

Thirty years ago, last July, a major victory was achieved in the ongoing civil rights movement for legal rights and protections for people with disabilities. On July 26, 1990, the Americans with Disabilities Act (ADA) was passed and signed into law, prohibiting discrimination on the basis of disability and helping to ensure equal access to opportunities. This groundbreaking legislation is recognized today as the most comprehensive disability law in the United States, mirroring and supplementing the Civil Rights Act of 1964 and the Rehabilitation Act of 1973.

On July 21, TIRR Memorial Hermann and the George & Barbara Bush Foundation convened key activists, advocates and policymakers who helped make the ADA a reality for a celebration of that landmark legislation. Equally important, they focused on the challenges that will shape the future of the disability movement. The 90-minute program, entitled "Let the Shameful Wall of Exclusion Come Down," taken from President Bush's remarks on July 26, 1990 as he signed the ADA, was moderated by Judy Woodruff, the managing editor and anchor of PBS NewsHour. Both the National Organization on Disability, and Lex Frieden, director of Independent Living Research Utilization (ILRU), a TIRR Memorial Hermann program, worked closely with the Bush Foundation in planning this year's commemoration.

Frieden, widely considered the chief architect of the ADA, continues to work to ensure equality and promote equity for people with disabilities as an advocate for change and the power of medical rehabilitation.

A Chance Meeting

Throughout our lives, there are key moments that define who we are and encourage us to take the first step on a future path we may not have ever imagined for ourselves. For Frieden, one of those moments occurred in November 1967, when he, a freshman in college, was involved in a car accident and sustained a life-threatening spinal cord injury.

"I went to an acute care hospital in really bad condition," he says. "I couldn't move. I couldn't feel anything."

After his condition stabilized in January 1968, his doctors gave him two options: go home and be in a local hospital for the rest of his life or go to a rehabilitation hospital, a new post-acute

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care offering at the time, to attempt to regain some level of independence.

Faced with this decision, he and his father visited some hospitals for rehabilitation, a relatively new specialty in the late 1960s. After touring the few facilities in existence in the late 1960s around the country, one stood out as the clear choice: TIRR (The Institute for Rehabilitation and Research), now TIRR Memorial Hermann.

Frieden remembers his father's personal welcome from TIRR's founder, William A. Spencer, MD, as well as assistance from employees who had been patients at the facility and the overall relaxed, patient-centered environment.

"My life was changed when my family and I decided to engage in a comprehensive rehabilitation program, rather than just stop the world and go home to Oklahoma and live in a hospital," he says.

After 2.5 months of intensive and successful rehabilitation, Frieden went home and reapplied to college. Then came another defining moment in his life.

"I was shocked to discover that I could not even be readmitted to college because I had indicated on my application that I used a wheelchair for mobility," he says. "That had a profound impact on my life. At that point, I would say I became a disability rights advocate."

After he was accepted into graduate school at another institution, Dr. Spencer, who became one of Lex's mentors, invited him to a meeting at TIRR with Congressman Olin Teague. "The meeting with [Congressman] Teague led me to believe that in fact our representatives in Congress could relate to some of the issues we had as people with disabilities," he says.

The Journey

Meeting Congressman Teague quickly led to the realization of Frieden's journey in advocacy, when he was invited to serve on a panel of experts commissioned by a congressional committee that dealt with science and technology.

Frieden traveled around the country, discussing how people with disabilities could benefit from the latest technology being developed in the then-booming space program, while giving his unique perspective in the process.

"That also kind of conditioned and reinforced the notion that people with disabilities must be involved in programs that affect their lives, in making decisions about those programs and leading those programs," he says.

The panel became the National Institute on Handicapped Research in 1978 and later, in 1986, the National Institute on Disability and Rehabilitation Research, now named the National Institute on Disability, Independent Living, and Rehabilitation Research.

Shortly afterward, the first step in legislation ensuring equal access for those living with disabilities was taken with the Rehabilitation Act of 1973. However, Title V of the Act, which would have delegated federal funds to be used for public space accessibility, was not implemented.

"Apparently, nobody understood how you could apply non-discrimination laws to people with disabilities. It just was not intuitive," Frieden says.

In 1976, in protest of the non-inclusion of Title V, people with disabilities blocked the Golden Gate Bridge and organized a sit-in in federal office buildings in San Francisco, shutting some down for weeks. The following year, Frieden helped found the Independent Living Research Utilization (ILRU) program at TIRR Memorial Hermann, which he currently directs.

As part of the same protest, a candlelight vigil was held in Washington, D.C., to urge then Secretary of Health, Education and Welfare Joseph A. Califano, Jr. to officially sign Section 504 of the Rehabilitation Act. The protest worked, and the section was signed into law.

Looking now to ensure equal rights under non-discrimination protections, Frieden took the next step. In 1983, he gave a testimony before Congress about independent living programs recommended in amendments made in 1978 to the Rehabilitation Act of 1973, which was due soon for reauthorization. A year later, he was appointed director of the National Council on the Handicapped, now the National Council on Disability, by President Ronald Reagan.

Under his leadership, the council produced two special reports, "Toward Independence" in 1986 and "On the Threshold of Independence" in 1988, which produced information on the legislative needs of people with disabilities in the United States. Congress chose not to move forward with the former, and thus the latter was produced with sample legislation called the Americans with Disabilities Act (ADA).

Two weeks after Frieden met with members of the U.S. Senate and participated in a televised interview in public support of the ADA, George H.W. Bush was elected president, and at that moment Frieden was certain his vision was going to be reality.

But in 1990, the year that the ADA was passed, a number of small-business owners with financial concerns lobbied against the bill. In response, an historic protest was held in Washington, D.C. where people with mobility disabilities abandoned their wheelchairs and dragged themselves up the steps of the Capitol building.

"I thought, 'there aren't going to be any more barriers,'" Frieden says. "Members of Congress came out of the Capitol to encourage us and basically said, 'You all have done what's needed to prove to the nation we need this bill.'"

The ADA was signed into law on July 26, 1990.

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"Apparently, nobody understood how you could apply non-discrimination laws to people with disabilities. It just was not intuitive."

Lex Frieden

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What Comes Next

While the 30th anniversary of the ADA is cause for celebration to commemorate the strides that have been made in securing equal rights for people with disabilities, it is also a time for reflection and review of areas that still need attention. One such area is employment, where Frieden mentions rates are almost the same as they were 30 years ago.

"It's very clear to me that employment remains one of the biggest challenges for inclusion of people with disabilities," he says. "While we have changed the physical environment and while we have changed the attitudinal and social environment, we have not effectively changed the workplace."

Another central issue that has yet to be resolved is access to affordable housing, about which Frieden says, "People are stuck in places where they don't belong, simply because there's no other place to live."

Over the years, disability rights advocates made major progress in health care, especially with the Affordable Care Act, but with the change in administrations this progress has been reversed.

Frieden says that since employer-paid insurance can now factor preexisting conditions into their insurance assessments, many are worried that they will lose their coverage and/or compromise their Medicare and Medicaid benefits. He also advocates for and is proposing a better community-based infrastructure, where a team can provide services to people with disabilities in their homes. In this new model, caregivers and assistants would be on-call and provide support for daily tasks, such as preparing meals and getting dressed.

Finally, he sees opportunities brought on by the public health emergency of COVID-19 for those with disabilities, in that remote work has become a viable option for many industries and their employees, in addition to the growth of telehealth offerings.

"I think COVID-19 may improve opportunities for people with disabilities, as we've proved that remote work can be done effectively," he says. "There may be a silver lining somewhere in this cloud. I think there are huge opportunities in adapting our clinical approaches to a telemedical modality, and we really need to exert some effort there... and build programs people can use to seek good medical care from rehabilitation programs in telemedicine and remotely."

"There may be a silver lining somewhere in this cloud. I think there are huge opportunities in adapting our clinical approaches to a telemedical modality, and we really need to exert some effort there... and build programs people can use to seek good medical care from rehabilitation programs in telemedicine and remotely."

Lex Frieden

Becoming an Advocate

So how can someone, as Frieden did, take the first step on a journey of advocacy? "People should take initiative, and they should be assertive, and they should expect to be treated equally and not simply resign themselves to a lifestyle that they may have perceived living, but instead be aggressive and attack those barriers," he says.

Frieden gave numerous recommendations for how to get started, including being in touch with the local mayor's office, working in campaigns for candidates who have solid platforms on disability issues and participating in centers for independent living. Organizations like the United Spinal Association for those with spinal cord injuries and the American Association of People with Disabilities, which Frieden helped found, also provide platforms for advocates and offer peer support.

The Power of Medical Rehabilitation

In January of this year, Frieden was again a patient at TIRR Memorial Hermann for rehabilitative care for 10 days after he was intubated and treated in the ICU for pneumonia. "If I had been discharged from the ICU to my home, it's very likely that I would not be mobile in the wheelchair right now; I'd still be recovering from the results of the intubation, from the ventilator and from the treatment I received to get over the pneumonia."

Frieden went on to explain the power of medical rehabilitation, saying, "When I left there, I felt like I was actually more fit than I was before I had the pneumonia and probably more fit than I had been for three years."

Given the variety of post-acute care options, making a decision about where to be treated can be difficult, but for Frieden, as it was back in 1968, the choice was clear.

"My advice to people who have the option is to choose the elite care that one would get in a comprehensive medical rehabilitation facility," he says.

Two years ago, when Frieden formally accepted the American Medical Rehabilitation Providers Association (AMPRA) National Leadership Excellence Award, he recalled that one of his doctors told him, "You can do anything you want to do, as long as you can figure out how to do it on four wheels."

It goes without saying that Frieden did figure it out, and while his advocacy journey still continues, his life-defining moment back in 1967 came to fruition with the passage of the ADA 30 years ago. ■

Lex Frieden is professor of health informatics in the School of Biomedical Informatics and professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth, and he is adjunct professor of physical medicine and rehabilitation at Baylor College of Medicine. He directs the ILRU program at TIRR Memorial Hermann.

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FEATURE

ILRU Supports Independent Living During the COVID-19 Emergency

Richard Petty, *co-director of ILRU, director of the IL-NET T&TA Center for Independent Living, director of the National Center for Aging and Disability at TIRR Memorial Hermann, and an assistant professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth*

While COVID-19 has affected everyone, one segment of the population has encountered a unique set of challenges in navigating the pandemic. People with disabilities often have additional hurdles to clear, as services have shut down due to the health crisis.

Since 1977, the Independent Living Research Utilization (ILRU) program has provided information, training, research and technical assistance for independent living across the United States. The group is housed at TIRR Memorial Hermann and led by **Lex Frieden**, director of ILRU and a pioneer in accessibility research and access, and **Richard Petty**, co-director of ILRU, director of the IL-NET T&TA Center for Independent Living, director of the National Center for Aging and Disability at TIRR Memorial Hermann, and an assistant professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth. He is an advocate who has spent decades working to advance consumer-controlled community services for people with disabilities.

ILRU has stepped up during COVID-19 through its IL-NET National Training and Technical Assistance (T&TA) Center for Independent Living, providing specialized technical consulting and training related to the virus for the nearly 500 Centers for Independent Living (CILs) and the 56 Statewide Independent Living Councils (SILCs) in American states and territories.

"CILs support people with disabilities so that they can live in the community, and many services are provided face to face," says Petty,

"All organizations that do this kind of work have had to pivot and find other ways to stay in touch with the people they serve, including web-based apps like Zoom and more low-tech forms of communication like phone calls and mail. We're continuing to help CILs address social isolation, food insecurity and other challenges the virus has created for home-based services. We've also helped people find ways to access telehealth."

To help Centers for Independent Living adapt to the new environment and succeed, ILRU has presented four webinars: CIL Response to COVID-19; Technology Options for CILs During the COVID-19 Pandemic; Statewide and Systemic Responses to COVID-19 and Other Emergencies for CILs and SILCs; and Early Findings on COVID-19 Research About CIL Responses to the COVID-19 Emergency. The webinars were well attended, with 690, 550, 250, and 111 participants, respectively.

Using Surveys to Discover Needs

Led by IL-NET Program Coordinator **Brooke Curtis**, ILRU researchers conducted three studies related to COVID-19, all in conjunction with IL-NET training and technical assistance activities: Survey to Identify Persons Forced into Nursing Homes and Institutions Because of the Loss of Home-based Services; COVID-19-related Needs Assessment Survey of Centers for Independent Living in collaboration with the Collaborative on Health Reform and Independent Living; and New Uses of Technology in Service Delivery by Centers for Independent Living.

"From the surveys, we've discovered that the biggest pandemic concerns of our consumers are health and health care, limited access to personal protective equipment (PPE), inability to see providers face to face, medical equity for people with disabilities, access to personal assistance, food, housing and income," Curtis says. "The biggest concerns of staff members at CILs are health and safety, stress, caregiving responsibilities and job security."

"Early on, a number of CILs reported people experiencing food insecurity, because the systems people had set up to get food into their homes had been disrupted by the pandemic," Petty says. "We're seeing that CILs have been providing PPE for clients and caregivers, and ensuring that the organizations that employ caregivers are living up to their responsibilities in this area."

When ILRU sent out the New Uses of Technology survey in April, they were hoping to help CILs transition into providing most services remotely. "We had a great response, and about 95 percent of those who responded said they were providing services remotely, but about half that number felt some services had to be provided in person," Curtis says. "The CILs were using technology, but they found that many consumers didn't have computers, smartphones or internet access, so they had to shift gears. The work we have done is

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>
> Richard Petty

Vinh Nguyen, JD,
director of the Southwest ADA Center

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helping them devise new strategies to provide service to consumers and address their organizational challenges related to staff working remotely."

Disability Rights Laws During the Pandemic

The ILRU's Southwest ADA Center is the Southwest region's leading resource on the Americans with Disabilities Act and related disability rights laws. The Center is part of the ADA National Network funded by the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR).

Since the beginning of the pandemic, the Center has received 30 to 40 calls a week, about half of which are related to COVID-19. The three hottest issues are face masks, access to health care and return to work, according to **Vinh Nguyen, JD**, director of the Southwest ADA Center.

"Employers have called to ask if they can require customers to wear masks," Nguyen says. "Businesses have always had the right to set conditions on customers. We know that as the 'No shirt, no shoes, no service' law. Even if there is no state law enforcing mask wearing, businesses can enforce it. We presented a webinar on the topic with 1,000 attendees, most of whom were from business establishments and were confused about whether they had the right to set the rules."

During pandemics, healthcare providers and government officials may have to decide how to allocate limited healthcare resources if the entire population cannot be served. "This has created concern in the disability community because people with disabilities are generally perceived to have weaker immune systems and underlying conditions that may require healthcare providers to use more effort, time, space and scarce medical resources for treatment," Nguyen says. "With PPE and new treatments for COVID-19 more readily available than they were in the first few months of the pandemic, we hope rationing of healthcare services won't be necessary."

Regarding return-to-work issues, people with disabilities have rights under the ADA and can ask their employers to accommodate their health needs. However, employers do not have to accommodate an employee who does not have a disability and is

afraid to bring the virus home to a vulnerable family member.

The Southwest ADA Center operates a hotline as part of the national network. For answers to questions related to disability law, call 800.949.4232. The ILRU also has posted COVID-19-related announcements daily through much of the pandemic. Links to the webinars are available at ilru.org; follow the link "Communication to the Field on COVID-19."

On Telework and Telemedicine

Now that many companies are taking advantage of telework to remain productive, people with disabilities could benefit. That is the view of Lex Frieden, professor of health informatics in the School of Biomedical Informatics and professor of physical medicine and rehabilitation at UTHealth and director of the ILRU.

"Many people with disabilities have been given the opportunity to excel in the new telework environment," Frieden says. "Because of their disabilities, they already have learned how to function well using online communication. Many have become leaders in the telework environment and are teaching others how to organize their time."

COVID-19 has also made telemedicine a necessity. "Healthcare providers have been building out telemedicine capability so quickly that they're still learning how to use the platforms effectively," he says. "When it comes to removing barriers to healthcare access, telemedicine has a lot of promise." ■

New CEO Appointment

Rhonda Abbott was recently announced as the new senior vice president and chief executive officer of TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network.

"For those of you who have worked with Rhonda, you are likely familiar with her unwavering dedication, operational strength and results-oriented focus demonstrated across many parts of our System. I am confident she will continue to ground our organization as a leader in medical rehabilitation and research, and as a provider of exceptional patient experiences," says Greg Haralson, SVP and CEO, Memorial Hermann-Texas Medical Center Campus.

In this role, Rhonda will oversee TIRR Memorial Hermann's continued excellence in rehabilitative care, research, advocacy and education across the Memorial Hermann Health System.

For 19 years, Rhonda has held integral roles within TIRR Memorial Hermann, starting her career as a staff therapist in the spinal cord injury and specialty rehabilitation program, and earning successive promotions to director of therapy services and director of clinical programs, vice president of operations and chief operating officer. Under her leadership, Rhonda has led clinical care redesign initiatives, translational research efforts, quality care improvements, expansion of therapy education programs and efficiency improvements. During her tenure, the Campus continued to demonstrate national recognition as a leader in rehabilitation by U.S. News & World Report.

Rhonda has led several smart growth initiatives resulting in a 11 percent increase in inpatient rehabilitation discharges from FY18-FY20 and a 4 percent increase in outpatient volume – all pre-COVID. She also led TIRR Memorial Hermann expansion efforts and clinical practice leveling across our System and helped secure CARF accreditation at three of our Memorial Hermann Rehabilitation Network locations.

Rhonda is on the board of directors for the American Medical Rehabilitation Providers Association, a member of the American Physical Therapy Association and American College of Healthcare Executives, a Texas Physical Therapy Association Tom Waugh Leadership Development Fellow, champion of Women Leaders of Memorial Hermann, graduate of the Center for Houston's Future Business/Civic Leadership Forum and an advocate for the ReelAbilities Film Committee.

MESSAGE FROM THE CHIEF MEDICAL OFFICER

TIRR Memorial Hermann has been recognized as No. 1 in Texas in *Newsweek* magazine's inaugural list of Best Physical Rehabilitation Centers, which was released last summer. This comes on the heels of our ranking by *U.S. News World Report* as No. 1 in Texas and No. 3 in the United States.

Newsweek's Best Physical Rehabilitation Centers 2020 ranking lists the best facilities in the 20 states with the largest number of facilities according to the Centers for Medicare & Medicaid Services (CMS). Instead of basing their list solely on reputation, *Newsweek* partnered with Statista, a global market research firm, to score facilities based on CMS data including quality of care, quality of service and quality of follow-up care, as well as an online survey taken by thousands of physicians, therapists and staff working in rehabilitation facilities.

We're committed to helping the men, women and children who pass through our doors reach as high as they can – and then just a little higher – to achieve things that once seemed impossible. We are honored that *Newsweek* and *U.S. News & World Report* have recognized that commitment.

Gerard E. Francisco, MD
Professor and Chair, Department of Physical Medicine and Rehabilitation
McGovern Medical School at UTHealth
Chief Medical Officer
TIRR Memorial Hermann

CLINICAL CARE

Customized Rehabilitation for Post-COVID-19 Patients

TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network are leading the charge in functional rehabilitation of individuals who no longer test positive after having COVID-19. The hospital's evidence-based interventions allow patients to go beyond the clinical setting, providing them with the opportunity to participate in important life roles in home, work, volunteer and community environments.

Due to the nature of the virus, many patients experience difficulty breathing, even after the virus leaves the body. Patients who required ventilators are at even higher risk of long-term effects. Individuals who have recovered from COVID-19 may also experience muscular atrophy and physical weakness, a loss of balance and coordination, and cognitive issues due to reduced oxygen to the brain. The impairments faced by people recovering from COVID-19 are similar but unique to the person. Our team customizes therapy and care for individuals based on their personal goals.

For more information, call 800.44.REHAB. ■

Redefining Rehabilitation in the COVID-19 Pandemic

During last summer's fast-developing pandemic scenario, TIRR Memorial Hermann participated in a national virtual meeting sponsored by the American Medical Rehabilitation Providers Association (AMRPA), entitled "COVID-19 and the Rehabilitation Hospital Impact: Perspectives from Texas." Three hundred participants were on the line for calls, as TIRR Memorial Hermann leaders were paired with Hackensack Meridian Health in Edison, New Jersey, to share their knowledge of and experience with COVID-19.

"The two locations were chosen to give a contrasting representation of the pandemic. Last July, COVID-19 was surging in Texas, while cases in New Jersey were decreasing," says **Rhonda Abbott, PT, FTPTA**, CEO of TIRR Memorial Hermann. "We were fortunate early in the pandemic to be able to learn from rehabilitation professionals in the Northeast, who had more experience with COVID-19 than we did. Their understanding added value and depth to our inpatient and outpatient experience as we have moved through the different phases of the pandemic."

Both hospitals presented their response plan to the surge in cases. "At TIRR, we went through an acute

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Rhonda Abbott, PT, FTPA
CEO of TIRR Memorial Hermann

" In some ways our communication with families is even more frequent now, but we miss the personal contact."

Rhonda Abbott

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alertness phase where we closed our treatment gyms, which has never occurred in our history," Abbott says. "At that time, we were still learning how the virus spread and how best to use personal protective equipment. As time and data revealed additional evidence, we reopened and created new treatment zones and placed Plexiglas dividers throughout our campus in high-traffic, high-contact areas. Because our natural habit as humans is to keep doing what we've always done, we had to create alternate spaces. We have one chair per table in the cafeteria, for instance, and all meetings are on Zoom."

Abbott says the patient-family component has been challenging. "We wanted to make TIRR Memorial Hermann a safe environment for people to start or continue their rehabilitation without fear of being exposed to the virus, so like other hospitals in Houston we instituted a no-visitor policy," she says. "In our outpatient facilities, no visitors are allowed. For inpatients, we allow very limited visitation with special permission only. Family and friends play a tremendous role in recovery during rehabilitation, so we have issued iPads to all locations to ensure that patients can stay connected with family members via Zoom calls. In some ways our communication with families is even more frequent now, but we miss the personal contact."

Gerard Francisco, MD, professor and chair of the department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth, and chief medical officer at TIRR Memorial Hermann gives credit to medical professionals around the world. "Our colleagues in New York, China, Italy, France and Spain – those who managed COVID-19 early on – shared good medical and clinical information and set an outstanding example for those of us who followed," he says. "That experience allowed me to encourage our physicians. If they can do it in New York City, we can do it here."

Since then, the medical community has learned that the virus affects many systems in the body. "We still don't know everything about the body's response to COVID-19, but we know there are often neurological effects similar to the issues we see in patients with stroke and brain injury, which may not be obvious immediately or may occur later. We are evaluating these problems and creating rehabilitation plans," Dr. Francisco says.

TIRR Memorial Hermann's post-COVID-19 therapy program for patients who no longer test positive opened in May. Built on the hospital's strong program of respiratory support, the program is evolving as more information about what the virus does to the body becomes available.

Nicole Harrison, MBA, BSN, RN, NEA-BC, vice president and chief nursing officer at TIRR Memorial Hermann, talks about the importance of putting plans into place to ensure that patients coming into the hospital are not positive for COVID-19. "Our work as nurses is very hands-on and in close proximity to patients," she says. "Our respiratory team helped us to create processes, algorithms and treatment pathways to that end. Our message to our nurses is that we're in this together, and we're making sure you're practicing in a safe environment."

Harrison admits it has been physically and emotionally challenging, although more so in the beginning when testing was less readily available and knowledge of COVID-19 was minimal. "Once testing kits were available, it gave us a huge sense of relief," she says. "We huddle every week and ask managers to have frequent huddles on the units. You can never over-communicate, and that's especially true now. Our nurses have been amazing, and the work we've done is immense. People have discovered vast emotional and skill reserves they didn't know they had. They know we're making history and setting standards for future pandemics." ■

Gerard E. Francisco, MD,
Chief Medical Officer TIRR Memorial Hermann Professor and Chair, Department of Physical Medicine and Rehabilitation McGovern Medical School at UTHealth

Nicole Harrison, MBA, BSN, RN, NEA-BC
Vice President and Chief Nursing Officer atTIRR Memorial Hermann

COVID-19: Screening and Triage Challenges in People with Disability Due to SCI

Radha Korupolu, MD, MS
Assistant Professor of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth and affiliated attending physician at TIRR Memorial Hermann

"Having a spinal cord injury may increase the risk of COVID-19 morbidity, and at the same time it may disguise the symptoms of acute respiratory illness."

Radha Korupolu

In March 2020, the Centers for Disease Control and Prevention (CDC) announced priority levels for testing patients with symptoms of COVID-19 and provided information on when to seek medical attention. At the same time, the agency provided almost no guidance for people with spinal cord injuries (SCI), who may not present with typical symptoms due to physiological changes. In an article published in *Nature* in May 2020, **Radha Korupolu, MD, MS**, and her research team outlined important differences in how people with SCI may present differently with COVID-19.[1]

"As soon as the COVID-19 pandemic began, we recognized that patients with SCI would not fit into the screening criteria established by the CDC, and would present a diagnostic challenge," says Dr. Korupolu, an assistant professor in the department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth and an affiliated attending physician at TIRR Memorial Hermann. "Having a spinal cord injury may increase the risk of COVID-19 morbidity, and at the same time it may disguise the symptoms of acute respiratory illness. Last March we had very stringent criteria for COVID-19 testing, and many patients with SCI didn't meet those criteria. As part of our review, we listed each symptom described by the CDC and explored how it could be very different in patients with spinal cord injury. We also noted that it was taking us longer to diagnose COVID-19 in people with SCI."

"Physiological changes associated with SCI include temperature dysregulation, impaired ability to cough, and abnormal sensations at or below the level of neurological injury, all of which hinder the presentation COVID-19 symptoms," she says. "People with spinal cord injury may also develop other symptoms during infection, such as new or worsening spasticity, autonomic dysreflexia or fatigue inconsistent with the CDC guidelines." In an international survey of 783 healthcare professionals who care for individuals with SCI, 10.3 percent reported their patients with COVID-19 had increased spasticity, 6.9 percent reported that their patients had rigors, and 6.0 percent reported that their patients had been asymptomatic.[2]

SCI patients with COVID-19 may not present with cough due to disruption of normal respiratory physiology to help patients and families in the early days of the pandemic," Dr. Korupolu says. We also wanted to bring global attention to the fact that there are atypical symptoms of COVID-19 among the SCI population, and that we need to have contingency plans available to ensure better outcomes for our patients with disabilities." ■

[1]*Korupolu R, Stampas A, Gibbons C, Hernandez Jimenez I, Skelton F, Verduzco-Gutierrez M. COVID-19: Screening and triage challenges in people with disability due to Spinal Cord Injury. Nature: Spinal Cord Series and Cases. 2020;6(35). https://doi.org/10.1038/s41394-020-0284-7.*

[2]*Stillman MD, Capron M, Alexander M, Di Giusto ML, Scivoletto G. COVID-19 and spinal cord injury and disease: results of an international survey. Spinal Cord Ser Cases. 2020;6:21. https://doi.org/10.1038/s41394-020-0275-8.*

Rehabilitation of Critically Ill COVID-19 Survivors

Although researchers are still learning about recovery after severe cases of COVID-19, literature about acute respiratory distress syndrome (ARDS) and severe acute respiratory syndrome (SARS) shows the benefits of rehabilitation after a long intensive care unit stay. A comprehensive rehabilitation program with a multidisciplinary approach can reduce ICU-acquired weakness, dysphagia, functional decline, psychological problems and cognitive impairment, and improve quality of life, according to **Radha Korupolu, MD, MS, Gerard Francisco, MD**, Harvey Levin, PhD, and Dale Needham, MD, PhD, in an article published in *The Journal of The International Society of Physical and Rehabilitation Medicine.*[1] Dr. Korupolu, the lead author, is an assistant professor in the department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth and an attending physician at TIRR Memorial Hermann.

"Being bedbound in the ICU can be debilitating in itself. Survivors of critical respiratory illness may experience long-lasting physical, cognitive and psychological dysfunction," Dr. Korupolu says. "Early rehabilitation

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Radha Korupolu

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of critically ill COVID-19 patients is crucial to improving quality of life and promoting timely transition of patients across different levels of care, but is challenging due to the severity of the illness, the need for strict infection control measures, staffing issues and scarcity of personal protective equipment in many areas."

At the time of publication of the article in June 2020, there was little data on outcomes of COVID-19 survivors, but the researchers had access to a wealth of data on the outcomes of ARDS survivors, as well as those from other pandemics, including SARS in Toronto and Hong Kong and Ebola virus disease in West Africa.

"Long-term sequelae of critically ill COVID-19 patients were unknown at this point, and they still are. We do know that survivors of critical illness experience a range of impairments known as post-intensive care syndrome, which may persist for years and result in poor quality of life," Dr. Korupolu says.

The article, which discusses challenges and potential solutions for rehabilitation of critically ill COVID-19 patients throughout the continuum of care, came about through Dr. Korupolu, who was part of the early mobility and ICU rehabilitation research team at Johns Hopkins University under the leadership of Dr. Dale Needham.

"I wanted to help our rehabilitation community, and given my past experience at Johns Hopkins with Dr. Needham, I contacted him to ask if he could guide me in writing this paper," she says. They put together a team that included Dr. Francisco, professor and chair of the department of Physical Medicine and Rehabilitation at McGovern Medical School and chief medical officer at TIRR Memorial Hermann, and Dr. Levin, professor of physical medicine and rehabilitation at Baylor College of Medicine.

"Dr. Needham and I had tons of experience with the rehabilitation needs of ICU patients," she says. "We wrote this in early April, when we knew far less about COVID-19 than we know now. There was so much panic at the time, and our goal was to create a guide about providing care. In general we knew what happened to patients on prolonged mechanical ventilation. We broke that into domains of possible physical and psychological dysfunction, and created an algorithm to predict what to expect. At the time we had limited personal protective equipment, and many patients in the ICU were suffering pressure injuries that caused a decline in function. We knew that nurses had to position patients correctly on the ventilator and prevent joint contractures and pressure injuries, but once patients were COVID-19 negative, what then? We outlined what you should do for the patient from ICU to home, and provided guidance on healthcare needs after discharge." ■

[1]Korupolu R, Francisco GE, Levin H, Needham DM. Rehabilitation of critically ill COVID-19 Survivors. Journal of the International Society of Physical and Rehabilitation Medicine. 2020;3(2):45-52.

TIRR Memorial Hermann Researchers Examine Tidal Volumes in Patients with SCI

Radha Korupolu, MD, MS, Agryrios Stampas, MD, and their research team have published a paper that challenges conventional wisdom about the safety and efficacy of using higher tidal volumes in patients with spinal cord injury on mechanical ventilation via tracheostomy. Dr. Korupolu, the lead author, is an assistant professor in the department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth and an attending physician at TIRR Memorial Hermann. Dr. Stampas, also an assistant professor in the department, is clinical research director of TIRR Memorial Hermann's Spinal Cord Injury Medical Program.

The article, "Comparing Outcomes of Mechanical Ventilation with High vs. Moderate Tidal Volumes in Tracheostomized Patients in the Acute Inpatient Rehabilitation Setting: A Retrospective Cohort Study," was published in *Spinal Cord*,[1] the official journal of the International Spinal Cord Society.

"When I came to TIRR Memorial Hermann for my fellowship, I noted that we were using high tidal volume for our patients with spinal cord injury, in contrast to what I observed while doing research at Johns Hopkins University," Dr. Korupolu says. "For people with acute respiratory distress syndrome, lower tidal volumes protect the lungs and are recommended based on clinical trials. The argument for using higher tidal volumes in people with SCI who do not have acute respiratory distress syndrome (ARDS) is that their lungs are healthy, and higher tidal volumes expand the lower lungs."

After reviewing the literature, Dr. Korupolu observed that even in people who don't have ARDS, lower tidal volume ventilation showed better outcomes with lower rates of pneumonia and acute lung injury compared to those who received higher volumes.

> *"Physicians from all over the world have expressed interest in participating in a future clinical trial to promote the use of evidence-based practice and develop standardized guidelines. That's our next objective."*
>
> Radha Korupolu

Given the lack of robust evidence in people with SCI, Dr. Korupolu and Dr. Stampas re-examined the current protocol for determining optimal tidal volume in that population. After designing a study protocol and gaining institutional approval, they conducted a cohort study, examining data from 84 adults with SCI admitted to TIRR Memorial Hermann on mechanical ventilation. In 50 patients, they used moderate tidal volume; the remaining 34 received high tidal volume. They concluded that high tidal volume is associated with increased risk of pneumonia and higher odds of adverse pulmonary events in tracheostomized patients with SCI.

"This has changed the way we do things at TIRR," Dr. Korupolu says. "We have decreased the tidal volume on patients with SCI who are hospitalized on ventilators. We examined our 2019 data a lower incidence of pneumonia during this time period accompanying the change in practice." Dr. Korupolu presented the research team's findings at the Academy of Spinal Cord Injury Professionals (ASCIP) virtual meeting in September 2020.

To study practice variation in the management of mechanical ventilation in people with SCI, she and Dr. Stampas, in collaboration with their colleagues and the respiratory therapy team at TIRR Memorial Hermann, conducted an international survey of healthcare providers who care for people with acute SCI on ventilation. Results from this survey suggest the need for evidence-based clinical guidelines for optimal ventilator settings for people with acute SCI who require mechanical ventilation. Dr. Korupolu is currently designing a randomized controlled trial in collaboration with Dr. Stampas and other staff at TIRR Memorial Hermann, including attending physicians **Isaac Hernandez Jimenez, MD**, and **Matthew Davis, MD**, as well as **Darby Cruz, BSRT, RRT**, respiratory therapy manager at the hospital, to further refine optimal ventilator settings to improve outcomes for people with spinal cord injury.

"Physicians from all over the world have expressed interest in participating in a future clinical trial to promote the use of evidence-based practice and develop standardized guidelines," she says. "That's our next objective." ■

[1] Korupolu R, Stampas A, Uhlig-Reche H, Ciammaichella E, Mollett PJ, Achilike EC, Pedroza C. Comparing outcomes of mechanical ventilation with high vs. moderate tidal volumes in tracheostomized patients with spinal cord injury in acute inpatient rehabilitation setting: a retrospective cohort study. Spinal Cord. 2020. 9 July. https://doi.org/10.1038/s41393-020-0517-4.

Big Comebacks for Little Patients:

TIRR Memorial Hermann Opens Inpatient Pediatric Unit

Beginning in December 2020, TIRR Memorial Hermann will offer the same quality of nationally ranked, customized care for pediatric patients who have suffered a severe injury or illness and would benefit from rehabilitation in an inpatient setting. The new eight-bed pediatric unit is locked, has a private, fully equipped, child-friendly therapy gym on the unit, and an outdoor sports court specifically designed for young patients. TIRR Memorial Hermann accepts patients from the age of 6 months to teenagers.

"Our therapists use the latest technology but remain child focused to ensure that our pediatric patients are comfortable while they make progress during their therapy sessions," says **Teresa Cramer, PT, DPT**, board-certified clinical specialist in pediatric physical therapy and pediatric clinical coordinator at TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network. "We partner with parents and caregivers in a family-friendly environment to ensure the best outcomes possible while maximizing quality of life and facilitating return to their families, schools and communities. Our team is specially trained to meet the unique needs of our young patients and their families, and we take every precaution to prevent the spread of COVID-19."

Pediatric rehabilitation services are available for patients with traumatic and non-traumatic brain injury, spasticity, post-tumor brain and spine management needs, limb loss, traumatic spinal cord injury, stroke, encephalitis or infectious encephalitis, tracheostomy who are technology-dependent, polytrauma, spine surgery, selective dorsal rhizotomy, and spina bifida.

"In addition to our full range of therapy care, we work with other specialists when needed, including neurosurgeons, orthopedic surgeons, pediatricians, oncologists, neurologists and many others to provide coordinated care," Cramer says.

Following their inpatient stay at TIRR Memorial Hermann, pediatric patients can transition to the Memorial Hermann Rehabilitation Network's outpatient program at four locations around Houston. Former inpatients can also follow up with a pediatric physiatrist at the TIRR Memorial Hermann Outpatient Medical Clinic.

To make a referral or schedule an appointment, call 800.44.REHAB (7-3422). ■

TIRR Education Academy Goes Virtual with Learning for Professionals Around the World

Virtual learning has enabled the TIRR Memorial Hermann Education Academy to expand its reach to rehabilitation professionals practicing across the United States and around the world.

"Sharing knowledge about evidence-based rehabilitation practice is especially important now, when in the middle of the COVID-19 pandemic, we're still required to stay current in our management of our patients. As a community, we're also learning more about rehabilitation of survivors of the virus – information that is important to share," says **Anna de Joya, PT, DSc**, board-certified clinical specialist in neurologic physical therapy and director of education at TIRR Memorial Hermann and the Memorial Hermann Rehabilitation Network. "When the pandemic hit in March, we ramped up quickly, flipping all our classes to a virtual format."

In August 2020, TIRR Memorial Hermann Education Academy was invited to host a COVID-19 webinar for the international rehabilitation community in the Middle East, including the United Arab Emirates, Kuwait and Saudi Arabia. "The webinar was well attended, and participants were highly engaged and seeking more, which prompted us to begin work on a another webinar for clinicians in the Persian Gulf Coast states," de Joya says.

She expects virtual learning to continue beyond the pandemic and further extend the reach of TIRR Memorial Hermann. "I'm not sure anything will replace in-person learning but on the flip side, the number of people who can connect from all parts of the world makes virtual education a win-win," she says. "We're finding that our discussions are much more enriched when they include people from across the country and around the world."

Courses available through the TIRR Education Academy are either prerecorded and web based for on-demand viewing, live streamed, or a hybrid of both. Upcoming courses and conferences include **Innovations in Limb Loss; Advancing Clinical Practice for those with Limb Loss in February of 2021** and TIRR Memorial Hermann's Disorders of Consciousness Conference, DoC 2021: Translating Knowledge into Practice."

For more information and to register, visit https://tirr.memorialhermann.org/professional-resources-education/continued-education. ■

TIRR Memorial Hermann Earns Top Recognition by *U.S. News & World Report*

TIRR Memorial Hermann ranked No. 3 among the country's top rehabilitation hospitals in the *U.S. News and World Report* Best Hospital rankings for 2020-2021. TIRR has been included in the prestigious rankings since the report's inception in 1989.

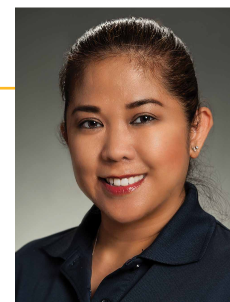
"For more than 60 years, TIRR Memorial Hermann's talented team of affiliated physicians, researchers, clinicians and employees have treated some of the country's most complex patients with compassionate, individualized care to meet the needs of their rehabilitation journey," says **Rhonda Abbott, PT, FTPTA**, CEO of TIRR Memorial Hermann. "Our team continues to be recognized as a national leader in rehabilitation medicine and committed to our mission of independence and inclusion." The ranking establishes TIRR Memorial Hermann as the No. 1 rehabilitation hospital in Texas.

The annual Best Hospitals rankings and ratings, now in their 31st year, are designed to help patients and their doctors make informed decisions about where to receive care for challenging health conditions and for common elective procedures.

The *U.S. News* Best Hospitals methodologies in most areas of care are based largely on objective measures such as risk-adjusted survival and discharge-to-home rates, volume and quality of nursing, among other care-related indicators. ■

PROFILES IN CARING

Liza Criswell, OTR, ATP



The Academy of Spinal Cord Injury Professionals (ASCIP) recently announced that **Liza Criswell, OTR, ATP**, an occupational therapist at TIRR Memorial Hermann, has been named the 2020 recipient of the Therapy Leadership Council Distinguished Clinician Award. The recognition is given to a member of the organization who has demonstrated outstanding clinical contributions in the area of spinal cord injury and spinal cord disorder (SCI/D). The award was presented to Criswell via pre-recorded Zoom in September 2020.

Criswell says she is passionate about educating both her patients and her peers. For the past few years, she has had opportunities to teach and co-teach continuing education courses on the topics of neurogenic bowel and bladder management, and sexuality after SCI.

"As OTs, we address clothing management, impaired hand dexterity, use of assistive devices, positioning and other ways to help patients gain independence," Criswell says. "OTs also address sexuality with SCI/D patients. This is such an important aspect of people's lives, so I incorporate the topic of sexuality in day-to-day interactions with patients in a nonchalant way so they feel comfortable. When we are talking about grooming and hygiene, I work the topic into that conversation. Sexuality is not just about performing sexual activities, but it also encompasses body image, intimacy, reproductive capabilities, gender identities/roles and sexual orientation."

Criswell also says that bowel and bladder management is one of the most liberating skills that that a SCI patient can have. "When patients can perform these tasks independently, it means they can leave the house and be out and about in the community. Addressing bowel and bladder management is also a great segue for me to initiate conversation on sexuality."

"This award means so much to me," Criswell says. "Being an OT at TIRR Memorial Hermann for more than two decades, 18 years of that with the SCI and Specialty Rehab team, it gives me joy to help nurture and enhance my patients' skills to achieve their fullest potential. We start building the foundation in inpatient rehab and outpatient therapy helps polish those skills. It gives me a sense of satisfaction and pride to see my former patients thrive in the community." ■

Patient-care Technology in the Palm of Your Hand:

Can a Mobile Mood Tracker App Detect Emotional Distress in People with Traumatic Brain Injury?

Researchers at TIRR Memorial Hermann are conducting a study to determine whether a self-management strategy, in the form of a mood tracker smartphone app, can improve emotional distress in survivors of traumatic brain injury (TBI), or make it less likely that they will develop it. The investigation is part of the $2.3 million Traumatic Brain Injury Model Systems (TBIMS) grant to TIRR Memorial Hermann, awarded by the National Institute on Disability, Independent Living and Rehabilitation Research.

"Many survivors of TBI have impaired cognition, problems controlling feelings and difficulty communicating with others. At about a year after being injured, 44 percent of people report anxiety and 40 percent report depression," says **Mark Sherer, PhD, ABPP, FACRM**, associate vice president for research at TIRR Memorial Hermann and a clinical professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth and at Baylor College of Medicine. "By five years after injury, 28 percent have depression and 17 percent have anxiety. If we think of emotional distress as having depression, anxiety--or both, at one year 53 percent of people with TBI have emotional distress. At five years, 38 percent have emotional distress. The problem is compounded by the fact that many people with TBI are reluctant to seek help for emotional problems, and when they decide they do want help, it's hard to find."

Many states, including Texas, have a shortage of mental healthcare providers, especially in rural areas. "Even in larger cities, providers are busy and may not be accepting new patients," Dr. Sherer says. "The out-of-pocket cost of private providers is high for those with insurance, and many people with TBI lack mental health coverage. Low-cost programs run by the state and cities are overused,

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which further limits access. We hope that our mood tracker project decreases the level of distress TBI survivors experience so that they will be less in need of services that are increasingly difficult to access."

The project aligns with the current self-management movement in health care. For example, a patient might be asked to monitor his or her own blood pressure or blood sugar levels at home, and keep a record of the readings to share with physicians. Research has shown that this form of self-management can result in improved population health.

"Previous studies have demonstrated that simply keeping track of a problem may improve it," Dr. Sherer says. "For example, tracking how often one has headaches can result in fewer headaches. Keeping track of one's blood pressure can lead to lower blood pressure. Along those same lines, we're hoping that keeping track of emotional distress will result in lower levels of emotional distress."

"We hope that our mood tracker project decreases the level of distress TBI survivors experience so that they will be less in need of services that are increasingly difficult to access."

Mark Sherer

Study participants are enrolled to active treatment or wait lists. People with TBI who are assigned to the study's active treatment arm are trained to use the mood tracker app and asked to rate their levels of emotional distress several times a week. Participants receive a support call each week for 6 weeks to address any problems in completing the self-ratings. After 6 weeks, they are asked to complete a 6-week outcome report, and are encouraged to continue completing the self-ratings, but do not receive further support calls. When the 12-week outcome is assessed, the participant's involvement with the study ends.

"We refer participants who report severe symptoms of depression for treatment," Dr. Sherer says. "We can also track how often participants use the app. If an individual is not using it, the person making the weekly call explores the reason for the barrier. If they're using the app regularly, we tell them they're doing a good job. These calls last five to 10 minutes, making this a very low-cost intervention." After six weeks, people on the wait list switch into active treatment, so that no one who enrolls is denied treatment. "Our tendency in the treatment of TBI is to target the most severely affected people," he says. "If we can target a much larger group of people at low cost and reach them before they have severe mental health problems, we will have made a jump forward in the care we offer TBI survivors. If our study is successful, it could be deployed and used by a huge population with traumatic brain injury and could serve as a model for following up with other populations."

At the close of the study, the researchers will conduct statistical tests to determine if use of the mood tracker app can result in less emotional distress or prevent emotional distress from developing. The grant was funded at the beginning of October 2017, with the goal of enrolling 126 participants. Co-investigator of the study is **Angelle Sander, PhD**, director of the Brain Injury Research Center at TIRR Memorial Hermann and associate professor and director of the division of Clinical Neuropsychology and Rehabilitation Psychology at Baylor College of Medicine.

"We're still on track to complete the study on the five-year TBI Model Systems schedule," Dr. Sherer says. "Even with COVID-19, we expect to be able to collect all our data and analyze it by October 2022." ■

Funded by a TIRR Memorial Hermann Rehabilitation Innovation Grant

Becky Thayer Leads a Study on Mirrors and Limb Loss Patients

When we look in the mirror, we're used to seeing a familiar face and body. However, after amputation or disfiguring injury, the reflection in the mirror is not the person we know.

"Nurses are trained in the medical treatment of patients with limb loss, but most have not been trained in how to be comfortable offering a patient the opportunity to view their new body image, in private, and be supportive during that healing step," says **Becky Thayer, MSN, RN, CRRN**, project manager for evidence-based practice in nursing administration.

To help change the paradigm, Thayer and her co-investigators used a TIRR Memorial Hermann Rehabilitation Innovation Grant to conduct a study on the topic. Their findings were published in the May 2020 issue of *Clinical Nurse Specialist*.[1]

"Often the first time a limb-loss patient sees herself or himself after surgery is in the big mirrors in the therapy gym, and other people may be there," Thayer says. "We think it's important for patients to have private time to visualize themselves as they are, in the moment, and become familiar with their 'new me.'"

Thayer and her colleagues were awarded the $10,000 grant to determine if an online teaching platform about the sensitive topic could successfully strengthen nurses' confidence in supporting a patient in-mirror viewing after a disfiguring event. To begin the study, 25 TIRR Memorial Hermann nurses took an online survey to assess their knowledge and feelings about helping patients with limb loss look at themselves in the mirror for the first time.

To create a video as part of the program to educate nurses, Thayer partnered with Wyona Freysteinson, PhD, associate professor of nursing at Texas Woman's University in Houston, and Lisa W. Thomas, DNP, APRN, ACNS-BC, CRRN, NEA-BC, former TIRR Memorial Hermann employee and an assistant professor at Cizik School of Nursing at UTHealth. Study participants watched the video, which featured interviews with limb- loss patients talking about their experience looking in the mirror after amputation, and sharing their thoughts on how medical staff could prepare them for what they saw.

"Immediately after the nurses watched the video, we conducted a discussion to gather their feedback, which led us to believe that a sensitive program like this could be successful for nurses using an online platform," Thayer says.

A survey conducted a month later showed that the nurses were more comfortable supporting a patient if the patient asked the nurse to help them look in a mirror after an amputation.

The TIRR Memorial Hermann Innovation Grant was established to support innovative rehabilitation research and the hospital's research mission. TIRR facilitates research that will improve the lives of rehabilitation patients worldwide. Thayer was awarded her grant in 2018.

"This is a great achievement – just the sort of thing our innovation grants are meant to support," says **Mark Sherer, PhD, ABPP, FACRM**, associate vice president for research at TIRR Memorial Hermann and a clinical professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth and at Baylor College of Medicine. "Becky began with limited research expertise but with determination and some good help from others, she completed a great project."

[1]Thayer B, Freysteinson W, Thomas LW. Transforming the Experience of Mirror Viewing for Individuals Face with Disfiguring Injuries. Clinical Nurse Specialist. 2020 May;34(3):132-136.

Dr. Grant Lashley's Long Road Back from COVID-19

"We designed a therapy program geared at improving strength of the proximal muscles in Dr. Lashley's arms and legs to do the heavy lifting of his body required to sit up and transfer out of a chair, go to the bathroom and eventually go back to daily life."

Nikola Dragojlovic

Nikola Dragojlovic, DO
Assistant Professor of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth

Emergency medicine physician Grant Lashley, MD, is among the many healthcare professionals who contracted COVID-19 while treating patients during the United States' first wave of virus cases in April 2020. While working the night shift in the emergency department at Abbeville General Hospital in Louisiana, he diagnosed one patient with COVID-19 and intubated another. A few days later, the 50-year-old noticed mild symptoms.

"We were careful with our use of personal protective equipment, because even then we knew there were asymptomatic carriers," Dr. Lashley says. "For about four days, in the evening around 7 p.m., I remember telling my wife that I didn't feel good. I had no fever or shortness of breath. We were headed into what I knew would be a busy weekend in the ER, and I thought I might have the flu. The results of my tests came back positive for strep and COVID-19. It seemed like a mild case and I thought I would recover at home, but my oxygen saturation levels kept dropping."

Twenty-four hours after testing positive for the virus, he was admitted to the COVID-19 Unit at Lafayette General Medical Center. After another 24 hours, he was transferred to the ICU and intubated, according to his wife Melisa Harrington, MD, a nephrology specialist in Lafayette. Dr. Lashley has almost no memory of his time in intensive care, where he remained intubated for 37 days. His wife later told him he suffered a stroke and underwent dialysis twice, while receiving every treatment recommended at the time for COVID-19.

On Mother's Day, his care team talked with Dr. Harrington about removing her husband from life support. "She said no, and she and my critical care specialists decided to try a high dose of steroids, which became the standard of care for severe COVID-19 cases about a month later. I think that's what turned me around," Dr. Lashley says.

When he regained consciousness,

he didn't realize he had lost more than a month of life. The long ICU stay left Dr. Lashley with a right wrist and left foot drop as a result of critical illness polyneuropathy. He also had generalized weakness after being immobilized on a ventilator for 37 days. He had lost nearly 40 pounds, almost half of which was muscle mass. After two weeks at a local long-term acute care facility, at the end of May 2020, he was transferred to TIRR Memorial Hermann under the care of physiatrist Nikola Dragojlovic, DO, an assistant professor of physical medicine and rehabilitation at McGovern Medical School at UTHealth who specializes in the management of patients following traumatic brain injury, polytrauma, stroke and other neurologic disorders.

"We designed a physical therapy program geared at improving strength of the proximal muscles in Dr. Lashley's arms and legs to do the heavy lifting of his body required to sit up and transfer out of a chair, go to the bathroom and eventually go back to daily life," Dr. Dragojlovic says. "His occupational therapy program was aimed at recovering dexterity in his hands. His speech therapist helped him with breath-support protocols that included special breathing techniques that allow people recovering from COVID-19 to regain the endurance they lost due to poor efficiency of the lungs. By learning the protocols, he regained the use of his lungs, his voice improved, and he could maintain his breath during physical activity."

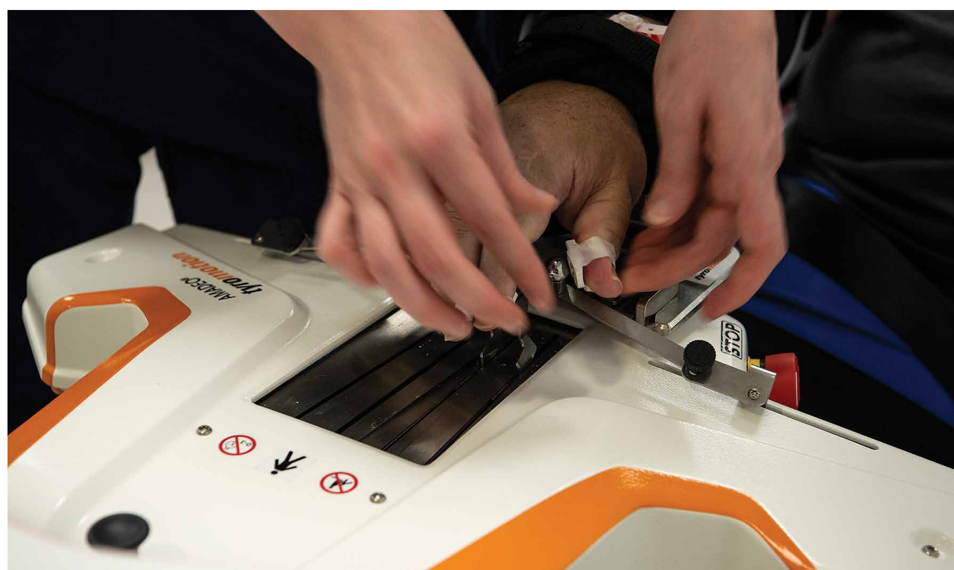
During Dr. Lashley's five-week stay at TIRR Memorial Hermann, he learned to walk again. "When he arrived, he required total assistance to get out of bed and to move, and he was unable to stand," Dr. Dragojlovic says. "He was incredibly optimistic in the face of all these physical and emotional changes, and his motivation and spirit were infectious. We all wanted to be a part of that, to help him and see him do better. While we were encouraging him, he was encouraging us during the stressful time of implementing our own COVID-19 staffing precautions to keep the virus out of our hospital during Houston's wave of infections. He was a great source of encouragement with his optimism and enthusiasm. He said, 'We're all in this together and let's take it one day at a time.' It was very refreshing."

Dr. Lashley says his experience at TIRR Memorial Hermann was amazing. "I had heard good reports about TIRR but didn't know what to expect. I found that everyone on the team was supportive, positive, and motivational – from nurses to physical therapists and occupational therapists to speech therapists to the folks in dietary."

"Kathy Gordon, my physical therapist, was fantastic. When I said I couldn't do something, she said, 'Yes you can.' And I did," he says. "My occupational therapist was Megan Cleveland. Her spirit was unsurpassable. She had the kind of energy a patient needs to see. She finds your weak spots and helps you improve. All the therapists I encountered were really great."

"Early on I recognized my limitations," Dr. Lashley says. "When this happens, you can either get depressed or do something about it. As an ER doctor, I'm used to living fast. I've never functioned in life in a slow, steady manner. I had to take a step back and learn to view every small improvement as a big deal. By the time I left TIRR Memorial Hermann, I was able to walk around the gym with a walker, which I never would have imagined. I'm very aware that I'm still near the beginning of my real recovery, but I no longer need to be in an institution because of what TIRR Memorial Hermann did for me."

"There's more that can happen with COVID-19 than just very bad pneumonia," Dr. Lashley said in conclusion. "You can have a stroke and develop blood clots. Those of us who have the good fortune to survive the effects of the virus can get better, and TIRR Memorial Hermann is a great place for that. One thing that happens is that the people you work with become a lot like family, and at the end, it becomes emotional to leave. In medicine, things can become very sterile, and that's definitely not the case at TIRR Memorial Hermann." ■



Dr. Gerard Francisco Receives AAP Distinguished Academician Award

The Association of Academic Physiatrists (AAP) has named **Gerard E. Francisco, MD**, professor and chair of the department of Physical Medicine and Rehabilitation at McGovern Medical School at UTHealth, as its 2020 Distinguished Academician.

Dr. Francisco received the award for achieving distinction and peer recognition by virtue of excellence as a teacher, researcher and administrator. He received the award at the 14th International Society of Physical and Rehabilitation Medicine (ISPRM) World Congress and 53rd Association of American Physiatrists (AAP) Annual Meeting last March in Orlando, Florida.

Dr. Francisco serves as chief medical officer of TIRR Memorial Hermann and director of the UTHealth NeuroRecovery Research Center at the TIRR. His research spans various areas, including robot-assisted therapy in persons with stroke, multiple sclerosis and spinal cord injury, as well as novel botulinum toxins for post-stroke spasticity.

"This award is special to me because I received the honor as an academician at a leading rehabilitation hospital," Dr. Francisco says. "TIRR Memorial Hermann is a nurturing environment for academic activities in physical medicine and rehabilitation. We have a long history of recognizing the importance of research and education in support of clinical care."

Since 2001, Dr. Francisco has been listed annually in Best Doctors in America. In 2017, he was inducted into the prestigious National Academy of Medicine (formerly the Institute of Medicine). In addition, he has received several Dean's Excellence in Teaching Awards at UTHealth. He served as president of the AAP from 2015 to 2017 and currently holds offices in various PM&R organizations, including the International Society of Physical and Rehabilitation Medicine.

Dr. Francisco received his medical degree at the University of the Philippines College of Medicine in 1989 and completed a postdoctoral fellowship in brain injury rehabilitation at Baylor College of Medicine. He joined UTHealth and the Brain Injury Program at TIRR Memorial Hermann in 1997.

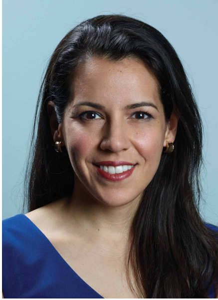
Dr. Angelle Sander Named President-Elect of ACRM's Brain Injury Interdisciplinary Special Interest Group

Angelle Sander, PhD, director of the Brain Injury Research Center at TIRR Memorial Hermann, has been named president-elect of the American Congress of Rehabilitation Medicine's Brain Injury Interdisciplinary Special Interest Group (BI-ISIG). Her six-year term began at the 2020 annual conference in October.

"BI-ISIG was formed to bring together experts in the field of brain injury," says Sander, associate professor and director of the division of Clinical Neuropsychology and Rehabilitation Psychology at Baylor College of Medicine. "Over the years the group has been responsible for much of the crucial work done in pushing forward brain injury rehabilitation."

Several smaller working groups come together to form BI-ISIG. "For example, the Cognitive Rehabilitation Task Force has developed a series of systematic reviews of the effectiveness of cognitive rehabilitation treatments, which has led to best-practice recommendations," she says. "The Disorders of Consciousness subgroup has put forth evidence-based guidelines for assessing people with disorders of consciousness. The working groups that make up BI-ISIG lead efforts to change or guide clinical rehabilitation practices across the country."

Dr. Sander will serve as president-elect of BI-ISIG for two years, and then as president of the group for two more years. As president, her duties will include oversight of the organization's working groups, service as a liaison to the ACRM Board of Governors, and participation in conceptualization of the vision for ACRM. Following two years as president, she will serve as immediate past president for two years, helping to transition the newly elected leadership into their roles.



Dr. Monica Verduzco-Gutierrez Named Chair of PMR Department at UTHealth San Antonio

Monica Verduzco-Gutierrez, MD, was appointed professor and chair of the department Physical Medicine and Rehabilitation at the Long School of Medicine at UT Health San Antonio, effective April 1. She succeeded Nicolas E. Walsh, MD, who served as chair for three decades and will continue in an emeritus role and as a part-time clinician.

Dr. Gutierrez is an accomplished academic physiatrist who began her career in 2006 at TIRR Memorial Hermann and McGovern Medical School at UTHealth as a resident in the former Baylor College of Medicine/UTHealth Alliance for Physical Medicine and Rehabilitation. She served as medical director of the Brain Injury and Stroke Program at TIRR Memorial Hermann, associate professor in the department of Physical Medicine and Rehabilitation and vice chair of quality and patient safety at McGovern Medical School at UTHealth.

"I am proud of Dr. Gutierrez and grateful to her for her many contributions to TIRR Memorial Hermann and McGovern Medical School during her time here," says **Gerard Francisco, MD**, professor and chair of the department of Physical Medicine and Rehabilitation at McGovern Medical School and chief medical officer at TIRR Memorial Hermann. "She played a significant role in our Outpatient Medical Clinic, Spasticity Clinic and the Brain Injury and Stroke Program, and I know she will excel in her new role."

Dr. Gutierrez grew up in South Texas and moved to Houston where she earned her undergraduate degree at Rice University and her medical degree at Baylor College of Medicine. At McGovern Medical School, she was elected chair of the Faculty Senate, where her work focused on developing wellness initiatives for faculty. She has won multiple awards for medical student and resident teaching and has had several administrative roles within the Memorial Hermann Health System.

MESSAGE FROM THE CEO

We define adaptation as the evolutionary process whereby an organism becomes better able to live in its habitat. This issue of the TIRR Memorial Hermann Journal is focused on our continued evolution to meet the needs of our habitat – the global disability community – in the face of a rapidly evolving pandemic.

The COVID-19 pandemic prompted us to step back and consider how to deepen our missions of clinical care, research, education and advocacy in terms of the virus. Our affiliated physicians, teams and researchers studied the literature, looked at evidence-based practice for our population in new ways, created treatment plans for our inpatients and outpatients, adapted programs rapidly for TIRR Memorial Hermann Sports and our wellness programs, and trained our teams. One of the beneficiaries of our rapid adaptation is Dr. Grant Lashley, an emergency physician from Lafayette, Louisiana, who survived COVID-19 and came to us for rehabilitation after spending 37 days on a ventilator. During his stay, we were implementing our own pandemic precautions. While we were encouraging him in his recovery, he was encouraging us. As his therapy team shared with us on the day he rejoined his family and headed home from TIRR Memorial Hermann, Dr. Lashley is just one example of many demonstrating our ability to return COVID-19 survivors to the community.

Lex Frieden, profiled in our cover story, has made phenomenal contributions to the disability community by changing the habitat itself so that the community can better embrace people with disabilities. His extraordinary advocacy journey began with work that led to the passage of the Americans with Disabilities Act in 1990, and continues today through the Independent Living Research Utilization (ILRU) program, which is helping people with disabilities maintain their independence while they navigate the pandemic.

When I came to TIRR Memorial Hermann in 2001, I fell in love with our pediatric program and knew I wanted to spend my career here. We are so happy to welcome the kids and families back to inpatient rehabilitation.

Having the opportunity to serve as CEO is a real privilege and honor. As an institution and as people, we have been pushed by the pandemic in unfamiliar and uncomfortable ways. Our leaders and teams have done an amazing job of evolving, particularly in a time of fear. Without them, none of this would be possible. We will continue to adapt and rise to the challenge, as we've always done. We reach as high as we can and then we reach a little higher.

Rhonda Abbott, PT, FTPTA
Chief Executive Officer
TIRR Memorial Hermann
System Executive for Rehabilitation Services,
Memorial Hermann Health System

TIRR Memorial Hermann Welcomes Physicians

Jason Hua, DO, Peter Riedel, DO, Ryan Stork, MD, **Jean Woo, MD** and **Alexander K. Wu, MD**, have joined the medical staff of TIRR Memorial Hermann and the faculty of McGovern Medical School at UTHealth as assistant professors of physical medicine and rehabilitation.

Dr. Jason Hua received his medical degree at Kansas City University of Medicine and Biosciences and completed residency training in physical medicine and rehabilitation at McGovern Medical School. Dr. Hua holds certificates in healthcare management from the University of Houston-Clear Lake and as a physician educator from UTHealth, and is a Lean Six Sigma Yellow Belt. His current research interest is virtual reality and distraction therapy in managing neuropathy pain flare in patients with acute spinal cord injuries. An assistant professor of physical medicine and rehabilitation at McGovern Medical School, Dr. Hua is a native speaker of English and Mandarin Chinese.

Dr. Peter Riedel is dual board certified in physical medicine and rehabilitation and in brain injury medicine. He received his medical degree at Philadelphia College of Osteopathic Medicine in Pennsylvania and completed residency training at Temple University Hospital/MossRehab in Philadelphia, where he was chief resident. He went on to complete a brain injury fellowship at MossRehab/Einstein Healthcare Network. Prior to joining TIRR Memorial Hermann, he was an attending physiatrist in Pennsylvania at MossRehab Elkins Park and at Reading Hospital Rehabilitation Wyomissing, where his work was acknowledged with the Reading Hospital Foundation National Doctor's Day Recognition Award in 2019. In addition to making presentations at national meetings of the AAPMR and AAP, he authored the chapter, "Pharmacologic Treatment Tools: Systemic Medications and Toxins, Opportunities and Pitfalls" in the August 2018 issue of the *Physical Medicine and Rehabilitation Clinics of North America*. He will be based at TIRR Memorial Hermann Outpatient Rehabilitation-The Woodlands.

Dr. Ryan Stork received his medical degree at the University of Toledo College of Medicine in Ohio, and completed residency training at the University of Michigan in Ann Arbor, where he was chief resident in physi-

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cal medicine and rehabilitation. He went on to complete a fellowship in brain injury medicine and rehabilitation at McGaw Medical Center of Northwestern University and the Shirley Ryan AbilityLab in Chicago. During his time at the University of Michigan, Dr. Stork also served as associate residency program director and received a grant from the Michigan Institute for Clinical and Health Research for the Project, "Measurement of Autonomic Dysfunction Following Concussion Using the E4 Wristband." He was awarded the Silver Crutch Teaching Award 2017, 2018 and 2020 in recognition of his commitment to teaching and engagement of PM&R trainees. Dr. Stork is an attending physician in the Brain Injury and Stroke and Specialty Programs at TIRR Memorial Hermann. Prior to joining TIRR Memorial Hermann, he was an assistant professor in the department of Physical Medicine and Rehabilitation at the University of Michigan.

Dr. Alexander Wu graduated from Rice University in Houston *summa cum laude* and received his medical degree at McGovern Medical School. He completed residency training at the same institution, where he was academic chief resident. During residency, Dr. Wu was the presenting author of "Traumatic Spinal Cord Injury and PM&R Consultation at a Level 1 Trauma Center: Five Years and 1,000 Patients Later" at the Association of Academic Physiatrists Conference in Atlanta in 2018. In 2019, he was the presenting author of "Pneumocephalus and Successful Air Transport Home: A Case Report" at the American Academy of Physical Medicine and Rehabilitation conference in San Antonio. Dr. Wu is an attending physician at TIRR Memorial Hermann-The Woodlands.

Dr. Jean Woo received her medical degree from Wayne State University School of Medicine in Michigan, and completed residency training in Physical Medicine and Rehabilitation at Baylor College of Medicine. She completed a fellowship in brain injury medicine and was a part of the honor society at Baylor as well. She has served on the AAP Resident Fellow Council and Program Committee. Dr. Woo is a former resident of TIRR and she participated in research projects focusing on spasticity, underserved patients with disability, and more. Dr. Woo is an attending physician at TIRR Memorial Hermann in the Texas Medical Center for the Brain Injury and Stroke Program. Dr. Woo will treat patients with traumatic brain injury, stroke, and Disorders of Consciousness. ■

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GRANTS

Lex Frieden and **Richard Petty** received $1 million from the U.S. Department of Health and Human Services Administration on Disability Independent Living Training and Technical Assistance Grant Program, in support of the Independent Living Research Utilization (ILRU) program. The funds will be used for training, consulting and publication of resources that support community-based organizations in providing social services for people with disabilities and older adults who rely on the centers to live independent lives.

Sheng Li, MD, PhD, with co-investigators **Danielle Melton, MD,** and **Shengai Li, MS,** received a grant for an NIDILRR Field-Initiated Project entitled "A non-invasive intervention (BreEStim) for management of phantom limb pain after traumatic amputation."

Mark Sherer, PhD, ABPP, FACRM, associate vice president for research at TIRR Memorial Hermann and Eva Sevick-Muraca, PhD, professor and Nancy and Rich Kinder Distinguished Chair of Cardiovascular Disease Research and director of the Center for Molecular Imaging of the National Cancer Institute Network for Translational Research at UTHealth, received an award of $69,858 to investigate the possible clinical benefit of manual therapy to improve lymph and cerebral spinal fluid drainage from the head and neck area.

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About TIRR Memorial Hermann

TIRR Memorial Hermann, a leader in rehabilitation, does more than provide therapy. We provide rehabilitation beyond the health-care setting for children and adults with a disabling injury or illness, and change lives by helping people regain the skills and confidence they need to reintegrate into the community and continue living full and meaningful lives. Our highly trained rehabilitation teams see the potential in every person they work with, and develop that potential to the fullest through customized goal setting and treatment planning.

We work to maximize independence, restore function and improve the quality of life for our patients. To achieve these goals, we put the individual patient and their family at the center of the rehabilitation team, and provide them with the information and skills they need to transition successfully to community settings.

TIRR Memorial Hermann is the best rehabilitation hospital in Texas and among the best in the nation, according to the U.S. News & World Report's Best Hospital rankings for 2019-2020. The rehabilitation hospital's ranking marks its 31st consecutive year among the magazine's Best Hospital rankings.

To make referrals or schedule an appointment, call 800.44REHAB (800.447.3422) toll free or 713.797.5942, or fax 713.797.5988.

We have opportunities for outstanding rehabilitation professionals. If you are interested in joining our team at one of U.S. News & World Report's leading rehabilitation hospitals, view all available opportunities at memorialhermann.org, tirr.memorialhermann.org, or ilru.org.

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