

Clinical Practice

Today

Duke Performs World's First Partial
Heart Transplant



What's Inside

- 4** Keeping It Simple: Plain Language Summaries in Clinical Practice
- 6** Duke BioRepository and Precision Pathology Center
- 14** Pediatric Liver Team Achieves High Survival Rates, Offers Early Transplant



DukeHealth

Clinical Practice Today

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Durham, NC 27707-2575

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Inside Clinical Practice Today

News Briefs

- 3 Leukemia Drug Shows Potential Against Metastatic HER2-Positive Breast Cancer**
Researchers used asciminib in mice to disrupt metastases
- 3 CRISPR Technology Demonstrates Success in Preventing, Treating COVID-19**
May forestall potentially deadly immune overreactions

New and Noteworthy

- 6 Duke BioRepository and Precision Pathology Center**
Celebrating a decade of national leadership
- 8 Novel Research, Imaging Improve Unruptured Aneurysm Care**
Will help differentiate between stable and unstable aneurysms
- 10 Duke Performs World's First Partial Heart Transplant**
Achievement in transplant care extends infant's life
- 13 Comprehensive Clinic for Cerebral Palsy and Related Conditions Is Rare Find in Southeast**
Pediatric physiatrist highlights unique care model
- 14 Pediatric Liver Team Achieves High Survival Rates, Offers Early Transplant**
Four times as many transplants as other programs in North Carolina completed at Duke

Practice Management

- 4 Keeping It Simple: Plain Language Summaries in Clinical Practice**
Helping disseminate trustworthy information to patients and providers
- 7 How to Retain and Attract Staff During the "Great Resignation"**
Check in with staff and intentionally cultivate community
- 9 Reduce Your Carbon Footprint, Improve Your Bottom Line**
Unexpected benefits of "going green"
- 12 Team Communication Training Is Key to Patient Safety Culture**
Effective training reduces likelihood of adverse events

News Briefs

CRISPR Technology Demonstrates Success in Preventing, Treating COVID-19

In what is believed to be a first, a research team led by Duke Health has demonstrated a way to use CRISPR technology to successfully prevent and treat COVID-19 infections.

The proof-of-concept experiments, conducted in mice, modified a currently available lipid nanoparticle to deliver a specific CRISPR/Cas13 mRNA that generates an inhospitable environment in the lungs for SARS-CoV-2 infection. The findings were published in *Nature Chemical Biology* in July 2022.

If further research in humans validates the approach, it could lead to a prevention strategy that is not dependent on the ability of antibodies to recognize specific viral

structures, which means that the strategy would be effective regardless of how the virus mutates. The approach also has a treatment benefit, lowering the virus burden and forestalling an immune overreaction that can become deadly during infections.

“Our results suggest that CRISPR technology represents a unique strategy for controlling SARS-CoV-2 infection and should be pursued as a potential approach for treating

COVID,” says senior author Qianben Wang, PhD, a Duke pathologist. “This nanosystem can be easily adapted in the future to target infection by other DNA viruses, such as hepatitis B.”



Our results suggest that CRISPR technology represents a unique strategy for controlling SARS-CoV-2 infection.”

Qianben Wang, PhD

Leukemia Drug Shows Potential Against Metastatic HER2-Positive Breast Cancer

A drug approved to treat leukemia successfully disrupted the ability of HER2-positive breast cancer tumors to colonize within the brain, according to animal studies led by researchers at Duke Cancer Institute.

The finding, published in *Cell Reports* in August 2022, provides evidence for human trials and suggests a potential new approach to derailing one of the main pathways that contributes to mortality associated with breast cancer. The researchers looked at how HER2 promotes breast cancer growth, particularly after becoming resistant to targeted treatments that have been highly successful in prolonging lives. The HER2 protein is a driving force in 30% of breast cancers, with approximately 45% of HER2-driven breast cancers leading to brain metastases.

Focusing on a pair of enzymes called ABL1 and ABL2 kinases, which regulate the expression of HER2, the researchers found that these kinases play a critical role in creating the conditions that allow HER2 to accumulate on the surface of breast cancer cells, fueling breast cancer tumor metastasis.

Ann Marie Pendergast, PhD, professor and vice chair of the Duke University Department of Pharmacology and Cancer Biology, and colleagues were able to disrupt the ABL kinases in mice using a leukemia drug called asciminib. By blocking the ABL signaling network, the therapy keeps the HER2 protein from accumulating in the breast cancer cells and shuts down their process for fueling the proliferation and spread of cancer cells.

“These findings support the study of ABL kinase inhibitors in humans for the treatment of HER2-positive brain metastasis,” Pendergast says.

Keeping It Simple: Plain Language Summaries in Clinical Practice

By Katherine Kahn

Plain language summaries (PLS) are text-based, easy-to-understand summaries of clinical trial data and other research. They are typically included in medical journal articles or can be found on patient advocacy and education websites.

These summaries can be especially important for patients, caregivers, and other stakeholders in therapeutic areas where research is rapidly evolving or access to potentially life-saving treatment is critical, such as in oncology and rare diseases. However, locating PLS is often a challenge for patients and health care providers alike.

“The point of all PLS is to make information available that is understandable to everyone,” Sylvia Baedorf Kassis, MPH, program director at the Multi-Regional Clinical Trials Center of Brigham and Women’s Hospital and Harvard says. “Having PLS of important studies that might actually impact clinical practice is vital.”

PLS could have played a more prominent role had they been more widespread during the early days of the COVID-19 pandemic, Baedorf Kassis says, when highly technical research of critical importance was emerging at a rapid-fire rate. “In rapidly evolving situations, such



PHOTO CREDIT: RyanKing999/Stock

as the pandemic, PLS of technical information could potentially help facilitate more trusted information dissemination,” she explains.

Another key benefit of PLS is that they can save time for health care providers. “Researchers use a lot of jargon, which is challenging not only for the lay public but also for clinicians,” says Maureen Maurer, managing director at American Institutes for Research. “Any time we can make research results more accessible—that includes for super busy clinicians who have a lot of information overload—the more we can do to make those messages clear and help people understand the important takeaways.”

One type of PLS that is becoming an integral part of research is that which informs clinical trial participants—who can number in the thousands—of the results of the studies in which they participated. “One of the main things clinical trial participants say is that they never hear back from researchers when they’re done with a study,” Baedorf Kassis says. Beginning in 2021, the European Medicines Agency instituted the requirement that clinical trial sponsors must provide PLS for all phase 1 to phase 4 trials. However, no similar regulation exists in the U.S.

Where to find PLS?

PLS are typically found alongside peer-reviewed publications or in supplementary journal materials. Although they are being included more frequently in medical research, no easily searchable database for PLS exists. As a result, most PLS users report finding them incidentally while looking through research. Below are examples of where to find PLS:

- **The Cochrane Database of Systematic Reviews** (www.cochranelibrary.com) has included PLS as part of their publications for nearly two decades; however, these articles are limited to systematic reviews only
- **Several publishers of medical journals**, such as Future Science Group, Sage Publishing, and PLOS, now encourage authors to include PLS when submitting journal articles for publication, but very few journals require it; some examples of PLS in the journal *Future Medicine* are available at: www.futuremedicine.com/plainlanguagesummaries

- **Pharmaceutical companies** are at the forefront of increasing patient engagement and access to research findings; some company websites contain searchable databases of clinical trial results published as PLS—for example:

- www.pfizer.com/science/clinical-trials/plain-language-study-results-summaries
- www.jazzpharma.com/science/plain-language-summaries/
- www.ucb.com/clinical-studies/Clinical-studies-index/Plain-language-Summaries

- **National Library of Medicine’s PubMed.gov** indexes some general PLS of disease conditions, as well as summaries attached to clinical trials

- **Patient-Centered Outcomes Research Institute** is a U.S. Congress–authorized nonprofit organization that funds comparative effectiveness research on a wide range of important health topics such as cancer, cardiovascular health, obesity, and rare diseases; as part of its authorization, the organization is required to make research results available within 90 days of receipt, and to date, approximately 400 PLS are available at www.pcori.org/topics

Do Health Care Providers Use PLS?

A recent study by Lobban et al. analyzed results from a survey of 103 physicians, nurse practitioners, physician assistants, and other health care providers. Respondents answered questions about how useful they found several online publication enhancements. Of those who rated publication enhancements as “very/extremely useful”:

- 71% said text-based PLS were the most useful, followed by infographics (65%), and videos (64%)
- Approximately half of those respondents who found PLS very/extremely useful have used them with patients
- Of all respondents, 1 in 6 said they referred patients and families to online PLS

Duke BioRepository and Precision Pathology Center

By Julie Poucher Harbin

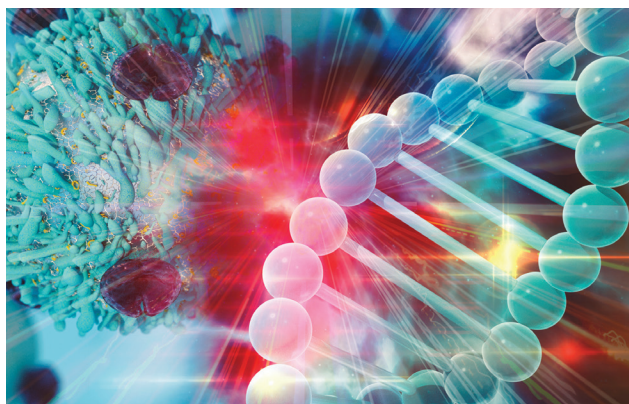


PHOTO CREDIT: GPhotos/Stock

A decade ago, leaders in the Duke Department of Pathology and Duke Cancer Institute (DCI) recognized an opportunity to advance human tissue-based research and precision cancer medicine at Duke by combining the Duke Comprehensive Cancer Center BioRepository and the Genome Trials Support Facility.

They collaborated with a supportive ally in Michael B. Kastan, MD, PhD, director of DCI. Kastan believed that DCI, the successor entity to the National Cancer Institute (NCI)—designated Duke Comprehensive Cancer Center, could become a national model for structuring cancer programs, bringing together research, patient care, and education.

In 2012, DCI and the Duke University School of Medicine committed to a five-year, three-million-dollar investment in a new Duke BioRepository and Precision Pathology Center (BRPC)—a clinical research and discovery resource with its administrative home in the Department of Pathology. Spurred by key investments in technology, services, and personnel, the BRPC grew, thrived, and progressively built a national reputation.

The BRPC received College of American Pathologists accreditation as a tissue, blood, and fluid biorepository,

tissue procurement service, and research support core laboratory under the leadership of pathologist Michael B. Datto, MD, PhD, BRPC inaugural director, and Shannon McCall, MD, who assumed the directorship in 2013. In 2014, the BRPC became an approved Duke University School of Medicine Service Center and DCI Shared Resource.

The BRPC has served as the biospecimen/pathology core for multiple U.S. government-funded, multi-institutional, and homegrown studies—Duke’s leading cancer pathologists working hand in glove with other DCI investigators.

Notable projects include gastric cancer immune profiling for an NCI-funded cancer health disparities project, digital spatial profiling of breast pre-cancer cells for the multi-institutional NCI Breast Pre-Cancer Atlas, and leadership of the NCI-supported Southern Division of the Cooperative Human Tissue Network.

The Duke Precision Cancer Medicine Initiative, one of the most significant achievements of the BRPC-DCI partnership, sparked the development at Duke of the Frameshift Molecular Registry of Tumors. The registry organizes cancer patients’ tumor molecular testing data and helps oncologists match existing anti-cancer drugs to molecular targets to block cancer growth. The Precision Cancer Medicine Initiative also guided the launch of a multidisciplinary Molecular Tumor Board to review patient cases and the participation of DCI in a national molecular tumor registry used by researchers worldwide to support cancer research and patient care (PROJECT GENIE).

“The BRPC has proven to be a wildly successful experiment in centralized biobanking, with benefits for Duke investigators and patients alike, and serves as a national model,” said Kastan. “I anticipate that the DCI/Pathology partnership will bring further growth and even greater impact in the years to come.”

How to Retain and Attract Staff During the “Great Resignation”

By Meredith Lidard Kleeman

According to the U.S. Bureau of Labor Statistics, nearly 1.7 million people working in the health care industry quit their job in the last year. Meanwhile, a Washington Post-Kaiser Family Foundation survey found that nearly 30% of frontline health care workers have considered leaving health care altogether as a result of the ongoing pandemic.

In light of these retention difficulties, Rose Sherman, EdD, RN, FAAN, editor-in-chief of *Nurse Leader*, the American Organization of Nurse Executives’ official journal, shares her advice for how clinical practice leaders can cultivate an environment that attracts new staff and retains current employees.

1. **Check in.** Speak regularly with your team about their performance and what they enjoy about their work. Sherman advises practice leaders to conduct “stay” interviews, a best practice from the Society for Human Resource Management. These interviews are structured discussions between leaders and individual employees to learn specific actions the leader can take to strengthen the employee’s engagement and retention with the organization.
2. **Implement flexible schedules.** The typical nine-to-five workday creates significant childcare burdens for parents with young children. “The standard office schedule may not work for all employees,” Sherman says. Working from home can be a boon for employees and practices, as many administrative and patient communication tasks, like conducting preoperative interviews and calling back with lab results don’t need to be performed in the office.
3. **Cultivate a community.** Many office-bonding rituals were paused or discontinued during the pandemic. Seemingly minor events, such as birthday celebrations and treating employees to regular lunches, create a



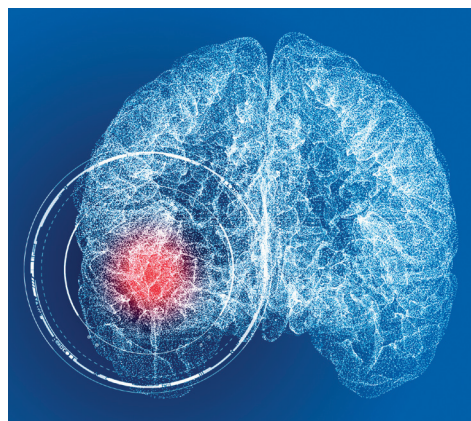
sense of teamwork and community, a crucial indicator of employee satisfaction. The way practices welcome and onboard new providers is also critical to retention. “A positive orientation process, including taking new staff out to lunch and making introductions, sets the stage for the rest of their employment,” advises Sherman.

4. **Prioritize staff safety and wellbeing.** Incivility and violence against health care workers is an alarming phenomenon. Adopt and implement zero-tolerance policies for all abusive behaviors and inform staff and patients of these policies. “Be firm with patients and families about maintaining an environment of civility—don’t allow staff to be yelled or cursed at by families without confronting the behavior,” she says.

Lastly, find ways to show your appreciation to employees as often as possible. Prioritizing respect, work-life balance, and a sense of community can create a culture that health care workers don’t want to leave.

Novel Research, Imaging Improve Unruptured Aneurysm Care

By Lindsay Kenton and Morgan DeBlecourt



Below are highlights about Hasan's research on imaging tools that help study and treat unruptured aneurysms. All these tools are being used and validated in small populations of patients, Hasan says.

Ferumoxytol molecular imaging. This technique uses a nanoparticle contrast to look for macrophages and inflammatory cells, more of which indicate a higher risk for rupture. Hasan was one of the first microvascular surgeons to work on this research in 2009. The technique can only be used in select patients, Hasan cautions.

High-resolution vessel wall imaging. This approach uses traditional contrast (gadolinium) to predict which aneurysms are stable or unstable on MRI. "When we cannot suppress the signal of the contrast from white to black at the interface, there's residual contrast, which tells us that the aneurysm is slightly active in terms of changes," Hasan says. "If we don't see anything, that gives us a signal that this aneurysm is stable, and with those patients, we sometimes recommend a watchful waiting approach, especially for those with smaller aneurysms."

Quantitative susceptibility mapping. This imaging technique can help quantify and detect microbleeds that cannot be seen from the surface of the brain. Because patients often present with what appears to be a migraine or tension headache, this tool helps Duke clinicians differentiate between those who have a headache and those with an unstable aneurysm.

Since his arrival at Duke in January 2022, David M. Hasan, MD, MSc, has been looking at ways to use innovative research and tools to help the 3% to 5% of the U.S. population who do not yet know they have an unruptured aneurysm, which can lead to serious complications if not carefully surveilled.

Treating an unruptured aneurysm requires expertise in differentiating stable from unstable aneurysms; the risk of rupture can vary. Duke specialists like Hasan can help patients evaluate their treatment options and risk factors to determine next steps.

"At Duke, not only are we very advanced in the surgical management of brain aneurysm, but we also use unique research tools that help us understand more about the disease and help patients make more educated decisions about which option to choose," says Hasan, who has treated more than 2,500 brain aneurysms using innovative techniques, including awake surgery.

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MedLink or call
800-633-3853.*

Reduce Your Carbon Footprint, Improve Your Bottom Line

By Emily Paulsen



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Many medical practices are looking at ways to help combat climate change through small, structural changes. What physicians may not realize, however, is that reducing their practice's carbon footprint can also save money.

The Association of Medical Device Reprocessors is an organization that diverts medical waste from landfills and lowers the cost of medical devices by up to 50%.

Focusing even five minutes a month on sustainability during staff meetings can save an estimated \$1,000 per physician per year, says Todd Sack, MD, gastroenterologist and executive director of My Green Doctor, an online service that helps office-based physicians lower their environmental impact.

Here are some initial steps to get started on a more sustainable and fiscally responsible office:

1. **Start with energy savings.** "Most offices can save money immediately by paying attention to simple things, such as thermostat settings, turning off machines at

night, and turning off inefficient heaters," Sack says. Set air conditioners to 74 F and the heater to 68 F. Consider installing motion sensors so that lights turn off when no one is in the room.

2. **Reduce, recycle, reuse.** Cancelling magazine subscriptions saves money and reduces waste. Setting out a recycling bin doesn't cost much and helps encourage others to recycle paper and plastics. Asking staff to bring in reusable water bottles and utensils, rather than supplying plastic cups/utensils, can save money and reduce plastic waste.
3. **Use telemedicine when possible.** Embracing telemedicine when appropriate not only increases access to care and saves on travel costs/time for your patients but also reduces your practice's overall footprint. Also, be sure that you are using electronic records management to save on paper costs and other supplies.
4. **Sustainably source clinical equipment.** A little creative thinking can help save money and resources on clinical procedures without compromising care. The [Association of Medical Device Reprocessors](#) is an organization that diverts medical waste from landfills and lowers the cost of medical devices by up to 50%. Its members have reported an average of \$1 million in savings annually.

Addressing sustainability can have unexpected benefits, too. "It can increase patients' trust in the practice," Sack says. Plus, having a common cause builds morale and teamwork among staff members. These effects can lead to potential financial benefits, such as greater retention in staff, as well as drawing in more patients to your practice because of its sustainability-focused reputation.

What's more, physicians and other health care professionals can extend their impact by educating patients and staff on ways to conserve energy and reduce their carbon footprint. "Health professionals are influential. People respect nurses, doctors, and pharmacists: their voices go beyond their offices," says Sack.

*The surgery was performed on
a 5-lb newborn in April 2022*

Duke Performs World's First Partial Heart Transplant

By Stephanie Lopez

Experts at Duke are hopeful a similar approach could be used to treat common valve replacements in children, providing a one-time surgery to implant freshly donated tissue that grows with the child.



Postoperative photo of baby Owen.

A Duke Health team has performed what is believed to be the world's first partial heart transplant, with the living arteries and valves from a freshly donated heart fused onto a patient's existing heart.

The surgery was performed on 5-lb newborn, Owen Monroe, on April 22, 2022.

The patient's family is from Lillington, NC, but he was born at Duke after his parents learned of his truncus arteriosus diagnosis, a condition in which two main heart arteries fuse together. The patient's single artery was leaking, reducing his chances of survival by waiting for a full heart transplant.

The goal of the procedure is to allow the valves to grow with the pediatric patient over time, increasing life expectancy. The team believes a similar approach could be used to place newly donated heart valves in countless other children with heart defects.

“This procedure potentially solves the problem of a growing valve,” says Joseph W. Turek, MD, PhD, MBA, chief of pediatric cardiac surgery, who led the landmark procedure. “If we can eliminate the need for multiple open-heart surgeries every time a child outgrows an old valve, we could be extending the life of that child by potentially decades or more.”

Typically, children with the same presentation as Owen would receive two preserved cadaver arteries with valves. But the cadaveric implanted tissue doesn’t grow with the child’s own heart. Pediatric patients usually require multiple follow-up open-heart surgeries to replace the valves with larger ones, dramatically limiting life expectancy.

In the novel partial heart transplant, Turek and the Duke team—including fellow pediatric heart surgeon, Nicholas Andersen, MD, and a large team of nurses, technicians, and support staff—used living tissue and valves. The tissue was procured from a donor heart that had strong valves but could not be used for a full transplant because of the condition of the muscle.

The team’s effort appears to be successful: the patient has shown remarkable growth and improvement since undergoing the surgery. His outlook is positive.

“What’s particularly remarkable about this procedure is that not only is this innovation something that can extend the lives of children, but it also makes use of a donated heart that would otherwise not be transplantable,” says Michael Carboni, MD, the patient’s pediatric transplant cardiologist at Duke.



PHOTO CREDIT: Duke Health.

“The valves in this procedure come from a donor heart with muscle tissue that was too weak to make it viable for full transplant but had strong valves that were well suited for the patient’s needs,” Carboni says. “This innovation amplifies the ways in which we can use the incredible gift of organ donation to save more lives.”

Experts at Duke are hopeful a similar approach could be used to treat common valve replacements in children, providing a one-time surgery to implant freshly donated tissue that grows with the child.

“As harrowing of an experience as it was for our family, we knew from the beginning that Owen was in the best hands,” says Nick Monroe, the patient’s father. “Our greatest hope is that Owen’s success story will change the way organ donation and transplants are handled not only for congenital heart disease babies, but for all patients.”

For More Information

More detailed information about the first partial heart transplant is available in the media briefing in which the medical team discusses the procedure. Organized by Duke Health, this briefing includes comments from the family and Dr. Carboni and can be viewed here:



Team Communication Training Is Key to Patient Safety Culture

By Frank Celia

Effective communication is an essential duty for health care providers. It is the foundation by which patients and their caregivers participate in their care and make informed decisions about the future.

When communication suffers, the risk of adverse events rises. By some estimates, 70% to 80% of all preventable medical errors are the result of communication failures. “In real estate, everyone says: ‘location, location, location,’” says Arnold Mackles, MD, MBA, a patient safety consultant based in Palm Beach Gardens, FL. “What I say in health care is: ‘communication, communication, communication.’”

During his career, Mackles, who practiced as a neonatologist for 23 years, has seen hospitals and medical practices devote increased time and energy to communication-related training. However, he says, there remain many opportunities for meaningful change in terms of avoiding communication barriers and reducing the number of preventable medical errors.

Part of the problem is lack of time and support staff, he says. Amid unprecedented staff shortages, physicians may have insufficient time for things like “teach-back” techniques that ensure patients have understood everything they have been told during a visit.

Practices can follow recommendations and initiatives by national health care organizations and agencies to improve communication, teamwork, and safety culture. For example, the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) program was developed by the Agency for Healthcare Research and Quality (AHRQ) to support effective communication and teamwork in health care.

Health care providers must ensure they are using effective techniques to communicate with each other and with patients, according to Mackles. This means creating a culture of safety in which all personnel feel comfortable speaking up when they suspect a problem, cross-checking



PHOTO CREDIT: Drazen Zelic/istock.

each other’s actions, helping others when needed, addressing errors in a nonjudgmental fashion, and debriefing and providing feedback after critical incidents.

Teamwork training should also emphasize the role of human factors, such as fatigue, expected or predictable errors such as misreading monitors or mishearing instructions, and the impact of different management styles and organizational cultures.

“Every industry has a culture,” Mackles notes. “Our goal is to create a safety culture that is effective at preventing medical errors.”

Teamwork Building Resources:

- [Assess leadership safety culture](#)
- [TeamSTEPPS Program](#)
- [AHRQ survey for medical office staff](#)
- [Protocol for preventing wrong-site surgery](#)

Comprehensive Clinic for Cerebral Palsy and Related Conditions Is Rare Find in Southeast

By Lindsay Kenton

For children with cerebral palsy (CP) and related conditions in the southeastern U.S., finding an interdisciplinary clinic that coordinates care, provides appropriate reactive medicine, and helps them look ahead to new challenges can be difficult.

The clinic at Lenox Baker Children's Hospital—Duke's wheelchair-accessible neuromuscular therapeutic campus—offers a unique care model, providing services for up to 500 families.

"We've created a comprehensive model that children with neuromuscular conditions really benefit from," says Christopher D. Lunsford, MD, pediatric physiatrist and co-director of Duke Pediatric Rehabilitation Medicine. Lunsford and clinic co-director Joan M. Jasien, MD, a Duke pediatric neurologist, work to coordinate appointments and provide extra services for patients with CP and related conditions. These include pediatric specialists from physical rehabilitation, developmental neurology, physical therapy, speech pathology, nutrition, social work, and orthopaedics.

This year, the program adds pediatric physiatrist Ankit Patel, MD, whose expertise in managing CP and related conditions for patients ages 15 and older complements Lunsford's patient age range of 0 to 21. Having access to all of these specialists in a single day of appointments is not only more convenient for patients and their families but also more collaborative for Duke specialists.

"When a child tells one of us that they'd like to try something, or the family expresses that they'd like to find better care options for a specific functional problem, our team comes together in real time to discuss those ideas with the patient and family and make a plan to move it forward," says Lunsford.

Some of these options may be part of Lunsford's ongoing research trials on wearable rehabilitation technologies. His most recent work involves more quickly identifying falls in the hospital, virtual reality (VR)-assisted occupational therapy, and a VR headset that supports patients' redevelopment of fine motor and hand function rehabilitation after a stroke.

Lunsford and his team emphasize the importance of the support needed between appointments: educating parents and family members, addressing questions and concerns, and connecting them with specialists in their own communities when necessary.

"Although it can be hard to predict what each individual case is going to need, telehealth helps a lot with this piece, and our approach for supporting patients between appointments helps us to connect them to appropriate therapists as soon as we can," he explains. The Duke team has also helped mentor therapists in patients' communities outside of the Triangle who may not be as experienced working with children with certain types of neuromuscular conditions, he adds.



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*Expert surgeons perform
12 to 15 transplants annually*

Pediatric Liver Team Achieves High Survival Rates, Offers Early Transplant

By Tim Pittman

“

Our program is not tied to the idea of offering a transplant only when assessing a ‘right-sized’ patient. If you are only willing to transplant a child based on age and size, they will be on the waiting list for a very long time.”

Deepak Vikraman, MD



PHOTO CREDIT: AndyL/istock

Duke specialists address liver health early in life when medically appropriate, with an emphasis on newborns.

The Duke Pediatric Liver Transplant Program has built a track record of exceptional outcomes while maintaining a commitment to offer transplants soon after birth when medically appropriate, providing treatment earlier than any other pediatric liver transplant center in the Carolinas.

Experienced surgeons offer variant grafts, and medical teams collaborate to diagnose and treat complex and life-threatening

liver disease, as well as tumors, in infants. Helping small infants with life-threatening disease receive an early transplant is a priority of the program.

“We have some of the best outcomes in the country, the result of our strong surgical and medical partnership,” says Deborah L. Sudan, MD, chief of the abdominal transplant surgery division and director of the pediatric liver transplant program.

“Duke offers a variety of transplant options that many programs do not perform, including living donor or partial grafts,” she adds. “The fact that we can transplant living donors and are willing to offer innovative methods with segmental transplants means we have a very low mortality rate on our wait list. We transplant patients earlier than most programs.”

The pediatric liver transplant team has completed four times as many transplants as any other North Carolina program, according to data from the Organ Procurement and Transplantation Network.

Based on the SRTR data, outcomes offer a significant metric: one-year patient survival rates are better at Duke than the national average. Among living donors, the one-year conditional survival rate is 100% compared with a national average of 94.64%; using deceased donor livers, the one-year conditional survival rate for Duke is also at 100%, whereas the national average is 97.87%.

Another metric important to the clinical team is access to appointments: urgent hepatology appointments are scheduled within one week, and transplant appointments can be scheduled within two to three weeks.

One of the distinctive characteristics of the program, Sudan says, is the emphasis on newborns. The program has chosen not to establish a minimum weight as acceptable for transplant, preferring to evaluate each patient individually. In the past three years, the smallest liver transplant recipient was two weeks old and weighted less than 3 kilograms.

The Duke program performs an average of 12 to 15 liver transplants annually. The team works with patients from birth until age 18 and helps with transitional care for young adults. Although the total number of transplants decreased during the COVID-19 pandemic, the number of patients seeking care at Duke has started to increase again.

Deepak Vikraman, MD, surgical director of pediatric abdominal transplant, says addressing liver health as early as possible is the team’s priority. “Obviously, if you can address the liver disease of a child sooner, before the disease process becomes more involved and more complicated, kids tend to do well and have a significantly better recovery process,” Vikraman says.

“Our program is not tied to the idea of offering a transplant only when assessing a ‘right-sized’ patient. If you are only willing to transplant a child based on age and size, they will be on the waiting list for a very long time. When children linger on the wait list longer, they usually get sicker and sicker.”

Gillian O. Noel, MD, MSc, a pediatric gastroenterologist and transplant hepatologist and medical director of pediatric liver transplant, says the team’s collaborative emphasis on patients and families is a key reason for their track record of good outcomes. “We want the family to feel like they are the most important part of the team,” Noel says. “The ways in which our medical and surgical teams interface is designed to benefit the patients and families. We always round together, review imaging together, and talk to families at the same time. This ensures they get the medical and surgical perspective simultaneously to help families make the best decisions.”

The team-based approach includes expertise from pharmacists, specialty-trained dietitians, ICU teams that are familiar with post-transplant care regimens, and many other members dedicated to transplant, Noel says.

“We work to ensure patients feel that they are well informed and receive comprehensive data about medical options and are supported by a highly coordinated, experienced, and caring clinical team at every step,” Noel adds.

Split Liver Options, Living Donor Increase Available Organs

The use of “split livers” allows for segmental transplants in the Duke Pediatric Liver Transplant Program, an option that increases the number of donor organs available and reduces wait times, Duke liver specialists say.

“We are the only program in North Carolina that offers split grafts in liver transplant,” Sudan says. An adult cadaveric organ may be used for two separate grafts.

The living donor program, which includes directed and non-directed donors, also increases the number of available organs. “Obviously, living donor grafts are well matched if they are from a relative, so that’s beneficial from an immunological standpoint,” she adds. “Living donors also offer an option for an elective procedure so we do not have to deal with prolonged preservation.”

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Cardiology

Decision-IQ: Treating New-Onset Heart Failure With Reduced Ejection Fraction

This activity presents a case of a patient with new-onset heart failure with reduced ejection fraction.

Expert faculty provides guidance on appropriate evaluation protocols such as electrocardiography, coronary angiography, and other workup steps, as well as appropriate medications for patients with heart failure with reduced ejection fraction.

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Orthopaedics

When Evidence-Based Guidelines Aren't Enough: The Effects of Institutional Protocols and State Legislation on Opioid Use in Total Hip Arthroplasty

Explore the prevalence and consequences of opioid overprescribing, as well as the effects of institutional protocols and statewide and nationwide legislation on decreasing opioid use after orthopaedic procedures, with a focus on total hip arthroplasty.

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Neurology

Decision-IQ: Don't Let Shaking Rattle You: Understanding Tremor in the Clinic

Gain knowledge of clinical evaluation techniques and differential diagnosis for common types of tremor, such as essential, dystonic, enhanced physiologic, drug-induced, functional, and parkinsonian tremor.

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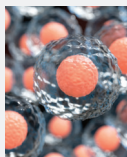
Nephrology

Decision-IQ: How to Manage a Highly Sensitized Kidney Transplant Candidate

This brief CME activity presents a scenario of a highly sensitized kidney transplant candidate during the COVID-19 pandemic. Experts in the field discuss recommendations for risk assessment and highlight strategies to increase the likelihood of transplant success.

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Exploring the Clinical Potential of Home-Based Care After Hematopoietic Stem Cell Transplantation

This activity reviews and interprets the results of previous early-stage clinical trials of home-based post-HSCT care and features a short video that provides context and perspective on how an ongoing phase 2 trial may affect patient care.

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This series was developed by Med-IQ in collaboration with Duke Health.



Duke University Hospital is consistently recognized as the best hospital in North Carolina, and nationally ranked in 11 adult and 9 pediatric specialties by U.S. News & World Report for 2022-2023.

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