

DELIVERING ON A PROMISE

Transformational Tech

Physicians use new technology, artificial intelligence
to improve pediatric care



TRAUMA-INFORMED CARE

First year results for Le Bonheur's Family Resilience Initiative shows high prevalence of adverse childhood experiences, social determinants of health

In its first year of operation, Le Bonheur's Family Resilience Initiative (FRI) showed that of the 246 families enrolled in the program, more than half of caregivers reported one or more adverse childhood experiences (ACEs) for their child and a social determinants of health (SDOH) need, according to research published in *Clinical Pediatrics*. The FRI program is a multidisciplinary collaborative that screens for ACEs and SDOH in Le Bonheur's General Pediatrics Clinic and connects families with needed services to mitigate and prevent ACEs.

According to the Centers for Disease Control and Prevention, adverse childhood experiences (ACEs) are potentially traumatic events that occur in childhood that can be emotionally painful or distressing and have effects that persist for years. Family and community supports



can shape a child's response to this trauma. Social determinants of health (SDOH) are defined by the World Health Organization as the non-medical factors that influence health outcomes. This includes the conditions in which people are born, work and live and the economic, social and political forces and systems that have impact on health equity.

"Adverse childhood experiences, including abuse, neglect and household dysfunction experienced prior to 18 years old, have been described as the public health emergency of our time," said Jason Yaun, MD, division chief of Outpatient Pediatrics and medical director for FRI. "The primary care setting is an ideal place for screening for ACEs and SDOH and providing emerging and evidence-based interventions."

FRI is embedded in the primary care setting and funded through a grant from the Urban Child Institute. Outreach coordinators screen patients ages 9 months to 5 years as a part of their well-child visit using the Accountable Health Communities (AHC) Health-Related Social Needs (HRSN) screening tool for SDOH and a modified version of the Pediatric ACEs and Related Life Events Screener (PEARLS) tool for identifying ACEs. Families that have a SDOH need or an ACE are enrolled in the FRI program. If SDOH are identified, the outreach coordinator connects the family with resources to meet their needs, and, if any ACEs are identified, free counseling is offered through a child psychologist embedded in the clinic. All families receive education and prevention strategies for ACEs. The outreach coordinators then communicate findings to the medical team and document ACEs and SDOH in the medical record. They continue to follow up with families via text, phone call, home visits or clinic visits based on intensity of needs. The FRI screening process is repeated with each family on an annual basis.

During the first year of intake, FRI had 246 participants, 92.3% of whom were Black and 58.8% with an annual income of \$15,000 or less. The primary results showed that 39.4% of families in the program reported ACEs and SDOH with 56.9% reporting at least one or more ACEs. 63% of families reported at least one SDOH-related need.

Additional results included:

- **The most common ACE reported was separation or divorce of parents/guardians (40.7%) followed by child living or having lived with a household member who was depressed, mentally ill or attempted suicide (13.4%).**
- **The average number of ACEs per patient was 0.94.**
- **40 families (33.1%) received a referral for psychology services.**
- **The most common SDOH issues were around food insecurity (36.1%) followed by utility needs (19.6%) and transportation (18.4%).**
- **Outreach coordinators conducted a total of 2,240 follow-up activities.**

"The successful design, implementation and experience of the FRI model, through one year of screening and enrollments, shows that the FRI model is a feasible approach to implement trauma-informed care," said Yaun. "Addressing ACEs and SDOH in a primary care setting is the future of pediatrics."

Yaun says that provider awareness of the ACEs and SDOH needs of patients practically impacts several aspects of patient care. Approaching care with a trauma-informed lens allows the clinic to view patients and families with empathy and probe into the root of the issue for anything from behavioral problems to appointment no-shows. They also can connect and be aware of how trauma and ACEs play into health-related problems like feeding, developmental and sleep issues.

"Our ultimate goals are to show that a program like this is feasible and sustainable in a primary care setting and demonstrate through patient metrics, including biological and developmental outcomes, how this program improves health and well-being for kids," said Yaun. "Understanding how social determinants of health and ACEs impact children's health makes the medical home the ideal place to screen for issues like these."

Their research supports the evidence that ACEs are common from a young age, which further emphasizes the need to mitigate effects of previous ACEs, while providing resiliency building and empowerment to prevent future ACEs. Next, the FRI program hopes to evaluate FRI interventions and impact on child development, health outcomes, health care utilization and more and potentially expand enrollment to adolescents.

Le Bonheur Children's Hospital in Memphis, Tenn., treats more than 250,000 children each year in regional clinics and a 276-bed hospital that features state-of-the-art technology and family-friendly resources. Our medical staff of more than 240 physicians provide care in 45 subspecialties.

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In this issue:

2 TRANSFORMATIONAL TECH

Physicians use new technology, artificial intelligence to improve pediatric care

10 CRITICAL NEED: TRAUMA AND INTEGRATED MENTAL HEALTH CARE

Largest pediatric study of its kind links acute stress disorder symptoms to traumatic injuries

12 THE LONG ROAD

Le Bonheur's Fetal Center, subspecialists provide expert, coordinated care from prenatal diagnosis to treatment

14 NEW ANTI-SEIZURE MEDICATION FOR ADOLESCENTS

Le Bonheur Neuroscience Institute publishes first paper studying use of cenobamate in adolescents

16 PROFILE: ANTHONY SHEYN, MD, FACS

Sheyn casts vision of specialization, collaboration as newly-appointed chief of Pediatric Otolaryngology

18 GOOD STEWARDS

National diagnostic stewardship initiative reduces blood culture, antibiotics overuse

20 CARE CLOSER TO HOME

Le Bonheur inpatient pediatric unit in Jackson, Tenn., provides access to pediatric experts

22 CANINE CARE

NICU therapy dog program brings developmental enrichment to the smallest patients

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Transformational Tech

Physicians use new technology, artificial intelligence to improve pediatric care

An artificial intelligence (AI) seizure detection system. Esophageal endoscopy without general anesthesia. Spine surgery navigation with machine-learning cameras. As technology continues to advance, Le Bonheur physicians are taking full advantage of the benefits that it can have for children.

“The utilization of cutting-edge technology is a necessary feature of comprehensive children’s hospitals like Le Bonheur Children’s,” said Jon McCullers, MD, chair of Pediatrics at the University of Tennessee Health Science Center (UTHSC). “The top children’s hospitals drive the field forward through a combination of improvements in clinical care, training the next generation of physicians and research.”

As technology evolves, it continues to advance care of kids, including advances in artificial intelligence and machine learning technologies which are studied at UTHSC and Le Bonheur, says McCullers. Continued work in technology improvements will create new pathways for treatment and diagnosis.

Le Bonheur Children’s physicians are paving the way for the future of pediatric health care through their use of technology innovations and search for new ways to help families and kids through technology.



AI for Epilepsy

Le Bonheur's Neuroscience Institute participates in clinical trial to validate AI seizure detection and characterization system



If your child has seizures, something as routine as putting them to bed can be fraught with anxiety. What if the child has a seizure overnight? Should the parent sleep in the same room as their child? What if they don't hear their child having a seizure?

Neurologists at Le Bonheur Children's Hospital are working with researchers on a clinical trial to validate Nelli®, an artificial intelligence (AI) technology that has the potential to ease parental anxiety and detect a child's seizures. Le Bonheur is the first hospital in the United States to test this technology for its use with children.

"If we can validate this technology, it would provide great peace of mind to parents. If their child is not seizure free at night, they could be alerted and attend to their child in case of a seizure," said James Wheless, MD, chief neurologist and co-director of Le Bonheur's Neuroscience Institute. "One of our goals is identifying technology that can help us help families."

Le Bonheur's Neuroscience Institute has long been involved in trials to examine technology that detects,

Le Bonheur Children's Hospital is the first location in the U.S. to test the Nelli™ seizure detection system for its use with children. Pictured here, the system is used in Le Bonheur's Epilepsy Monitoring Unit (EMU) and consists of a camera (pictured above the patient), computer and microphone.

diagnoses and treats seizures. The Nelli® system is just one in a long line of technologies that Le Bonheur physicians have investigated to benefit their patients.

Nelli® consists of a personal recording unit (PRU) that contains a computer, camera and microphone. The child does not wear anything, and nothing is connected to them. The PRU captures movement and sound and then analyzes them via AI algorithms to determine if they are indicative of seizures. The system uses advanced machine learning techniques to continue refining its ability to detect seizures as it learns more movements and sounds that indicate a seizure event. The system also generates a report for a physician to review their patient's seizure activity.

But the system is still learning, particularly with detecting children's seizures. That's why its creators contacted Wheless to assist with a clinical trial validating its use for children using the Epilepsy Monitoring Unit (EMU) at Le Bonheur.

"We have a robust and busy EMU that captures many types of seizures," said Wheless. "We also have a track record of testing seizure detection devices for families — we understand the concept and have a history of participating in many of these trials to use technology to improve the lives of our patients and families."

To date, Le Bonheur's Neuroscience Institute has been involved in 24 studies that use technology to help children with epilepsy. Four of those studies investigated epilepsy treatments with technology, such as responsive neurostimulation (RNS) and vagus nerve stimulation (VNS), including studies to bring VNS to market for use in children. So far, Le Bonheur has conducted 11 trials to investigate technology that detects seizures.

"We also have a track record of testing seizure detection devices for families — we understand the concept and have a history of participating in many of these trials to use technology to improve the lives of our patients and families."

James Wheless, MD, co-director of the Neuroscience Institute

Potential Benefits of Nelli®

- **Ease parental anxiety about nighttime seizures**
- **Detect seizures without requiring the child to wear anything**
- **Constant nighttime monitoring for seizures**

And now Wheless and Le Bonheur's neurologists are helping Nelli® learn to better detect seizures by reviewing the results produced by the system to improve the algorithms and provide a more accurate seizure report. If a child in Le Bonheur's EMU has a seizure, but Nelli® doesn't label it as such, the

video EEG system in the EMU will pick up the seizure event.

Le Bonheur neurologists can mark the event as a seizure in the system's stored memory.

From then on the system will register that movement or sound as associated with a

seizure. In this way, Le Bonheur

neurologists are determining which seizures types the AI is missing and then helping the AI to improve.

The ultimate goal is to validate the system so that parents can use Nelli® at home as a seizure detection and management system. Any movements and sounds would instantly run through the database. If the movements and sounds are associated with seizure events, the system would notify in near real time.

This way, parents could sleep better

at night and have peace of mind knowing their child was under constant monitoring.

The system could also be valuable for neurologists as they look to best treat their patient's seizures. Neurologists could use results from the system to determine whether or not a patient is having seizures and what kind, which is helpful information to adjust treatment and alert physicians if the child's seizure control is inadequate.

"At this stage, the technology looks very promising. Nelli® could improve patient care by giving parents peace of mind. If a caregiver is exhausted — either from not sleeping at night due to a concern that their child will have a seizure or from sleeping with the child — a child is not going to get as good of care," said Wheless. ■

Optimal Care, Minimal Risk

Le Bonheur gastroenterologist brings
unsedated TNE to pediatric patients

For children with eosinophilic esophagitis (EoE), constant monitoring is crucial to keep this chronic immune disease under control and ensure that treatments continue to be effective. EoE leads to build up in the esophagus because of allergic and immune responses, which can cause difficulty with feeding, swallowing and failure to thrive due to malnutrition. The only way to monitor inflammation and build up is frequent imaging and biopsies so that the care team can see the progress of the disease. But for kids, this means undergoing endoscopy under general anesthesia up to four times per year, a time consuming and uncomfortable process.

Le Bonheur Gastroenterologist Dong Xi, MD, brought a new option to Le Bonheur Children's — transnasal esophagoscopy (TNE). TNE has been used in the adult population but is new to pediatrics. With this procedure, children with an esophageal condition, like EoE, can have



Le Bonheur Gastroenterologist Dong Xi, MD, brought unsedated transnasal esophagoscopy (TNE) to select children at Le Bonheur Children's Hospital. TNE has been used in the adult population but is new to pediatrics.

imaging and biopsies without general anesthesia in a fraction of the time. Le Bonheur Children's is the only center in the area offering TNE for children. "For conditions like eosinophilic esophagitis, no blood test or other diagnostic is available, and most kids need to undergo endoscopy regularly," said Xi. "With TNE we are able to avoid the risk of general anesthesia and provide optimal care for these patients."

Xi works with a team of technicians and nurses to conduct TNE. A child life specialist explains the process to kids and offers different distraction therapies — music, video, toys — to make sure they are relaxed and comfortable during the procedure. Then, Xi numbs the nose and throat with a spray and, using the smallest available tube between 1/10 and 1/5 inch in diameter, inserts the tube through the nose to the esophagus. Using TNE, he is able to capture the same quality photos as a traditional endoscopy.

"For conditions like eosinophilic esophagitis, no blood test or other diagnostic is available, and most kids need to undergo endoscopy regularly. With TNE we are able to avoid the risk of general anesthesia and provide optimal care for these patients."

Dong Xi, MD, Le Bonheur Gastroenterologist

Once in the esophagus, Xi can look for signs of active inflammation and take any necessary biopsies. TNE is currently used at Le Bonheur for patients 12 years and older. It takes no more than 15 minutes to complete the test, meaning what was once a three to six hour appointment for families is now a quick outpatient visit.

Benefits of TNE include:

- **No general anesthesia.** This means a shorter procedure time, easier recovery and no anesthesia-associated risks.
- **A full TNE appointment takes one to two hours in an outpatient setting compared to three to six hours for endoscopy with anesthesia.**
- **No need for line placement.** No anesthesia means no unnecessary needle sticks.
- **Patients can immediately return to all normal activities without limitations.** Children miss less school and other activities.

“Most children tolerate TNE without much difficulty,” said Xi. “We can better and more easily monitor kids with eosinophilic esophagitis and keep an eye out for signs of active inflammation.”

Xi has seen further benefits in the way TNE allows for continuous, uninterrupted care of children with EoE. While the recommendation for children with EoE is to undergo an endoscopy every three months, compliance is a known issue. Concerns about frequent general anesthesia may mean less orders for endoscopy and therefore poor management of the disease. Parents may also be less compliant in their child’s care. They may avoid clinical follow-up visits if they anticipate the physician will recommend endoscopy. TNE alleviates many of these fears, making follow up and continuous monitoring much easier for physicians, patients and families.

“With TNE we can offer kids and their caregivers a procedure to optimally monitor the disease with fewer risks,” said Xi. “We believe that this can improve the compliance to care and the quality of life for our patients.” ■



Thanks to unседated transnasal esophagoscopy (TNE), children with esophageal conditions can have imaging and biopsies in a fraction of the time, avoiding the risks of general anesthesia and providing optimal care.

In a Flash

New spine surgery navigation technology reduces radiation, improves efficiency

Thirty minutes waiting for technology to map the spine used to be the norm for Orthopaedic Surgeon Derek Kelly, MD, when prepping for spinal surgeries that required navigation assistance. And the use of fluoroscopy, an imaging technique that uses frequent X-ray, meant he and his staff were exposed to radiation in the operating room (OR) throughout the surgery.

But all of this changed when Le Bonheur Children's became one of the first pediatric centers in the country to install a new spine navigation system — SeaSpine's Flash™ Navigation System with 7D technology.

"With the new navigation system, we can be safer, the patient and staff are exposed to less radiation in the OR and we have more confidence in our screw and instrument placement thanks to the 7D technology," said Kelly. "As one of the first pediatric centers to have this technology, we're excited to have another tool for our spine program and another option for complex cases."

The Flash™ Navigation System 7D technology uses machine-vision cameras and advanced algorithms for



Le Bonheur Children's is one of the first pediatric centers in the country to install the new Flash™ Navigation System for spine surgery navigation. Using machine-vision cameras and advanced algorithms, the system uses visible light during surgery, instead of X-ray, to take photos that match the spine to the preoperative CT scan.

navigation during surgery — similar to the technology found in self-driving cars. During surgery, special cameras analyze the surface of the spine using only visible light. Using a preoperative CT scan as reference, the navigation system then recognizes tracked instruments in relation to the spine. The advanced cameras and algorithms recreate a 3D image for real-time surgical navigation in seconds.

These special cameras replace the standard imaging technique of fluoroscopy, which meant constant exposure to radiation for the patient and the staff during the surgery. In addition to reduced radiation, lack of fluoroscopy reduces costs associated with personnel needed for fluoroscopy and offers a much quicker imaging process than intraoperative CT.

Benefits of Flash™ Navigation System

- Improved efficiency throughout key portions of the case
- Radiation-free, using only visible light for intraoperative imaging
- Ability to complete more than one navigation case per day
- Cost efficient, reducing the need for radiology and associated personnel
- Highly accurate with more than 1,000,000 data points

The Flash™ Navigation System creates an image for surgical navigation in the following steps:

1. Patient has a preoperative CT scan that is loaded into the navigation system.
2. The orthopaedic surgeon begins incisions. Once the spine is visible, special cameras take a photo using only visible light. This creates a full-color, 3D image reconstruction with nearly 1,000,000 data points for surgical navigation.
3. This photo is mapped to the preoperative CT scan in less than 30 seconds.
4. A reference array is attached to the spine in order to navigate where instruments are in space, based on the CT scan and photo, allowing for more confidence in accuracy of screw and instrument placement.



“Excellent surgical navigation takes radiation or takes time. The 7D system provides the balance between the two, and we can even now do two cases in the same day.”

Jeffrey Sawyer, MD, Orthopaedic Surgeon

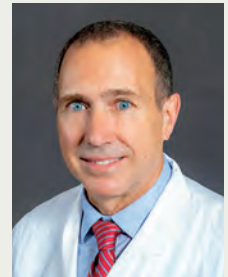
This technology can currently be used for any open spine case with the hope that its uses will expand in the near future.

“Excellent surgical navigation takes radiation or takes time. The 7D system provides the balance between the two, and we can even now do two cases in the same day,” said Orthopaedic Surgeon Jeffrey Sawyer, MD. “With the new navigation, we can plan the surgery more beforehand and be more efficient. As a surgeon, I feel a bit more relaxed and confident of where I’m placing screws.” ■

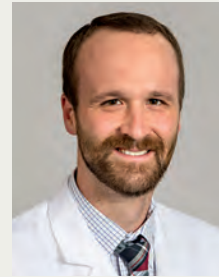
Le Bonheur physicians currently using the Flash™ Navigation System



Derek Kelly, MD
Campbell Clinic Orthopaedics



Jeffrey Sawyer, MD
Campbell Clinic Orthopaedics



Benjamin Sheffer, MD
Campbell Clinic Orthopaedics



William Warner, MD
Campbell Clinic Orthopaedics



Critical Need: Trauma and Integrated Mental Health Care

Largest pediatric study of its kind links acute stress disorder symptoms to traumatic injuries

In the largest pediatric study to date reviewing Acute Stress Disorder (ASD) following a traumatic injury, results showed that 64.8% of children tested positive for ASD in the aftermath of a traumatic injury. ASD is the precursor to Post Traumatic Stress Disorder (PTSD). The study stems from a partnership between Le Bonheur Children's Trauma Services Division and the BRAIN Center at the University of Memphis and was published in *Trauma Surgery & Acute Care Open*. The results of the study provide evidence of the link between traumatic injury and mental health distress symptoms in children and much-needed data to advocate for integrated mental health screening in the hospital setting at the time of an injury.

"We have a critical need for mental health screening and counseling services at the time of an acute pediatric trauma — these findings further highlight that need," said Le Bonheur's Medical Director of Trauma Services Regan Williams, MD. "Traumatic experiences can negatively affect long-term function and increase overall mental health distress in these kids without the proper mental health intervention."

Investigators were awarded a grant to embed trauma mental health counselors in the Trauma division at Le Bonheur Children's, thereby integrating mental health

care with medical care at the bedside. This study was conducted as a needs assessment to identify the incidence and establish a baseline understanding of children who experience symptoms of acute stress disorder (ASD) after a traumatic injury. Previous pediatric studies of mental health and traumatic injury have focused on the development of post-traumatic stress disorder (PTSD), which requires symptoms to be present for at least one month for

diagnosis. Screening for symptoms of ASD — avoidance, negative mood, hyperarousal and intrusive symptoms — allows for earlier intervention and prevention of the development of PTSD.

In the eight months of the study, 617 patients ages 2-18 years were screened using the Child Stress Disorders Checklist-Screening Form (CSDC-SF) — a four item self-report assessment adapted from

the Child Stress Disorders Checklist (CSDC). The questions rate a child's behaviors of avoidance, emotional distress and hyperarousal, with a score higher than one indicative of acute stress disorder. Patients were screened within 24 to 48 hours of admission to the hospital or at an outpatient clinic visit if they were discharged prior to screening. All patients received emotional support, psychoeducation and free outpatient counseling resources. Patients scoring one



A recent study conducted with Le Bonheur's Trauma Services Division and the BRAIN Center at the University of Memphis demonstrated the link between traumatic injury and mental distress symptoms in children. By providing mental health care at time of injury, Le Bonheur physicians hope to decrease the long-term negative consequences of trauma.

or higher were educated on coping mechanisms and potential risk factors of PTSD and were recommended for outpatient mental health services.

The average ASD score was 1.71 with 64.8% of children scoring one or higher. The percentages found in this study are significantly higher than previous studies, which researchers say may be attributed to the prolonged heightened stress response due to the COVID-19 pandemic.

“The pandemic may have had a significant impact on the stress reaction kids have to further medical traumas,” said Eraina Schauss, PhD, founder and director of the BRAIN Center at the University of Memphis. “Having increased levels of stress for prolonged periods of time, combined with traumatic incidents, could lead to higher reported levels of acute stress.”

Older participants, females, motor vehicle collision patients and weapons-related patients experienced higher levels of ASD symptoms in the study. Discrepancies in



Regan Williams, MD, Le Bonheur's medical director of Trauma Services, participated in a new study that shows the need for mental health screening and intervention for her patients who suffer a traumatic injury.

scores between older and younger patients may reflect the elevated risk for exposure to traumatic events for adolescents and the concern of under reporting among caregivers for children in early childhood. Furthermore, the higher level of ASD in motor vehicle collision and weapons-related injury patients show a link between injury severity and increased mental distress.

“Our findings further support literature indicating that ASD is a prevalent reaction that children experience following an injury,” said Williams. “Proper screening, early identification and treatment can lead to improved mental health outcomes among children post-injury.”

Providing timely mental health intervention is crucial for several reasons, researchers say. Prolonged exposure to stress can lead to long-term negative impacts on a child's mental health. Therefore, it is critical to develop mental and behavioral health counseling that is integrated with medical care at the time of the traumatic injury. This allows for proper

screening, early identification and prompt treatment to mitigate the consequences of ASD and PTSD. This study provides evidence needed to advocate for these types of services in pediatric hospitals.

“Providing trauma-focused mental health counseling interventions in the aftermath of traumatic injury can mean the difference between developing adaptive coping strategies and mental wellness or experiencing days to years of ongoing suffering,” said Schauss.

Future research will examine ASD symptoms three months after injury to see if PTSD diagnoses were reduced with mental health intervention and assess the efficacy of various counseling interventions after traumatic injury.



Trauma Services providers round with counselors from the Hospital-Based Violence Intervention Program – a group of counselors providing mental health interventions for children who have experienced a traumatic injury. This is a partnership with the BRAIN Center at the University of Memphis.

THE LONG ROAD



At one hour old, Easton was transferred from his birthing hospital to Le Bonheur's Neonatal Intensive Care Unit. Here, he received critical care, and his parents learned to care for their son's omphalocele.

Lori and Clay Smothers were overjoyed. They finally got the news they had been hoping and praying for: they were expecting a baby.

Their excitement quickly turned to fear when an omphalocele — a birth defect of the abdominal wall causing some organs to grow outside the body — was identified on a 12-week ultrasound.

As a veteran nurse of 20 years, Lori was accustomed to caring for people, yet now Lori and her son were the patients who needed expert care. During her second trimester, she was referred to Le Bonheur Children's Fetal Center.

"From the moment I walked through the door of the Fetal Center Clinic, I had a whole new attitude. I went from being terrified to feeling at peace and comforted that my baby was going to be ok," Lori said. "The way things were explained by the medical team at Le Bonheur made all the difference and everything looked reassuring from his monitoring and labs."

At Le Bonheur's Fetal Center, Maternal-Fetal Medicine Specialist Norman Meyer, MD, PhD, began the coordination of care for Lori and her baby bringing together all the specialists needed for a smooth delivery, continuity of care after birth and the management (and eventual close) of the omphalocele.

"Because of the way the Fetal Center operates, we have access to all pediatric subspecialties for our patients to see in one visit and provide support to intervene as soon as needed," said Meyer. "We were really concerned because Easton's omphalocele was very large with a lot of fluid accumulation, so it was important to have immediate access to pediatric subspecialists."

Lori underwent extra monitoring including fetal echocardiograms and ultrasounds to ensure her son was growing. She visited the Fetal Center every two weeks until 35 weeks gestation when visits increased to two appointments per week.

The Fetal Center worked with obstetricians, surgeons and other pediatric specialists to ensure a seamless delivery for Lori and a plan of care ready to implement the moment of Easton's birth. She met with

Le Bonheur's Fetal Center, subspecialists provide expert, coordinated care from prenatal diagnosis to treatment



Today, Easton is a thriving 5 year old. He is pictured here with Le Bonheur Maternal-Fetal Medicine Specialist Norman Meyer, MD, PhD, during a social visit to the Fetal Center.

surgeons who would be with her and Easton from before his birth until the omphalocele was finally closed.

Meyer and his team continued to follow Lori and Easton closely to make sure that their condition did not change prior to delivery.

The night before their son was born, Lori and Clay traveled to Memphis from their Martin, Tenn., home and were able to stay at FedExFamilyHouse — lodging located across the street from Le Bonheur — free of charge. FedExFamilyHouse is home to many of the families who visit the Fetal Center at Le Bonheur Children's.

Lori delivered nearby at Regional One Hospital in Memphis and her son, Easton, was transferred to Le Bonheur's Neonatal Intensive Care Unit (NICU) via Pediflite when he was only an hour old. Easton received critical care at Le Bonheur, and Lori and Clay learned how to care for their son's omphalocele and change his bandages.

Meyer and the Fetal Medicine team transitioned Easton's care to the pediatric subspecialists who cared for

him until the time came to close his omphalocele.

"After delivery, the neonatologists and pediatric subspecialists take over the care of our patients like Easton. The Fetal Center's job was to get Lori and Easton as far along as possible so that surgeons would have a better time and not have to worry about complications related to premature birth," said Meyer.

Easton spent two months in the NICU receiving expert care. Once discharged, Easton and his family returned to Le Bonheur every two weeks due to the complex nature of his omphalocele.

When Easton was 19 months old, his surgeon — who had monitored Easton since he was in utero — determined he was ready for surgery to repair his omphalocele.

Easton's surgery was a success. His omphalocele was closed, his hernia was repaired and he was able to undergo a circumcision. Two days later, Easton was pulling a red wagon down the halls of Le Bonheur.

"It was really amazing. Easton's omphalocele was one of the worst,

"Because of the way the Fetal Center operates, we have access to all pediatric subspecialties for our patients to see in one visit and provide support to intervene as soon as needed."

Norman Meyer, MD, PhD, Maternal-Fetal Medicine Specialist

and to see this kid now, he doesn't even have much of a scar," said Meyer. "It's amazing what pediatric surgeons can do and the teamwork across specialties that make outcomes like this possible."

Today, 5-year-old Easton is thriving. He loves being outside with his father, Clay, especially when they are hunting and fishing.

Easton was discharged from surgical follow-up care at Le Bonheur in 2021 and receives checkups for his ears with a pediatric otolaryngologist at Le Bonheur's Jackson Outpatient Center.



Easton is now discharged entirely from surgical follow-up and only visits a Pediatric Otolaryngologist at Le Bonheur's Jackson, Tenn., Outpatient Center.

New Anti-Seizure Medication for Adolescents

Le Bonheur Neuroscience Institute publishes first paper studying use of cenobamate in adolescents

Cenobamate is effective in treating focal seizures in adolescents and is a viable option for those with a history of rash as a reaction to anti-seizure medications, according to an article published by Le Bonheur neuroscientists in *Pediatric Neurology*. This study marks the first published work on the use of cenobamate in the pediatric population. Results showed that more than 50% of patients had at least a 50% seizure reduction following the addition of cenobamate to their treatment plan.

Research was led by Le Bonheur Neuroscience Institute

Summer Plus Fellow

Taylor Elliott, a student at Rhodes College in Memphis, Tenn.

Co-authors were

Le Bonheur Medical Editor Andrew J.

Gienapp, Le Bonheur Neuroscience

Institute Co-Director

James W. Wheless,

BScPharm, MD, and Le Bonheur Psychiatric Mental Health Nurse Practitioner Tracee Ridley-Pryor, DNP, who also serves as director of Research Strategies and Collaboration for Pediatric Neurology at the University of Tennessee Health Science Center.

“In our real world study we were able to build upon prior controlled studies about the efficacy of cenobamate for treating focal seizures,” said Wheless. “Our study extends use into the adolescent age group showing its effectiveness in the

pediatric population for the first time.”

Researchers performed a retrospective chart review of patients 12 years and older in Le Bonheur’s Comprehensive Epilepsy Program currently treated with cenobamate. Forty-five medication-resistant Le Bonheur epilepsy patients, who had tried an average of 12 anti-seizure medications prior to cenobamate, were treated with the medication. Of those patients, 28 also experienced a prior rash with prescribed medications.

“The slightly greater than 50% responder rate is especially impressive in this population, who have had documented failure to a high number of prior anti-seizure medications. Many had also undergone prior epilepsy surgery or device therapy as a treatment option. They represent some of our patients with the most difficult to control epilepsy.”

James W. Wheless, BScPharm, MD, Le Bonheur Neuroscience Institute Co-Director

Le Bonheur clinicians found that most adolescent patients treated with cenobamate experienced a reduction in seizure activity, were able to wean off at least one other anti-seizure medication and none developed a rash as a side effect.

Results showed that

60% of patients responded to cenobamate, obtaining at least a 50% decrease in the number of focal seizures, with 16% becoming seizure free during the study. In addition, before starting cenobamate, patients were taking an average of three anti-seizure medications, but at follow up, anti-seizure medication was decreased by at least one medication in 49% of patients. Of the study patients who previously experienced rashes with prescribed medications, none experienced a rash

due to cenobamate, establishing a new treatment option for this subgroup.

“The slightly greater than 50% responder rate is especially impressive in this population, who have had documented failure to a high number of prior anti-seizure medications,” said Wheless. “Many had also undergone prior epilepsy surgery or device therapy as a treatment option. They represent some of our patients with the most difficult to control epilepsy.”

Cenobamate was able to be used alongside other anti-seizure medications, with lacosamide, cannabidiol,

clobazam and felbamate being the most common. The most common side effect when adding cenobamate to a patient’s regimen was drowsiness, which could be minimized by decreasing the cenobamate dose. None of the patients discontinued cenobamate because of adverse events.

“This promising finding supports the need for extrapolation studies for children and adolescents,” said Wheless. “Further studies of cenobamate in the pediatric population are needed to determine if this is a viable treatment option for younger populations.”



Le Bonheur Neuroscience Institute Co-Director James Wheless, BScPharm, MD, was a co-author on a recent study that found cenobamate to be an effective treatment for focal seizures in adolescents. This is the first published work on the use of cenobamate in the pediatric population.

PROFILE: ANTHONY SHEYN, MD, FACS

Sheyn casts vision of specialization, collaboration as newly-appointed chief of Pediatric Otolaryngology

For Pediatric Otolaryngologist Anthony Sheyn, MD, FACS, medicine is in his blood.

Born in Ukraine, the majority of his family were in the medical field, including his grandmother — who was one of the first female chiefs of staff in the Soviet Union. In the generation above Sheyn, all the women in the family became doctors. Sheyn says that medicine is almost like a family business — his brother and two cousins are now physicians as well.

After only one year in medical school at the University of Cincinnati, Pediatric Otolaryngology (ENT) quickly became the obvious choice for his specialty.

“I realized that ENT was a field that touches every area of the body — almost every condition has a head or neck component,” said Sheyn. “As an ENT, I get to have continuity of care equivalent to general pediatricians. I see kids and adolescents who I first saw when they were infants. I get to know patients and families, and there’s a lot of satisfaction in that.”

Sheyn was recently appointed chief of Pediatric Otolaryngology at Le Bonheur and the University of Tennessee



Le Bonheur Chief of Pediatric Otolaryngology Anthony Sheyn, MD, FACS

Health Science Center (UTHSC). As the new chief, he casts a wide vision of innovation in pediatric ENT and collaboration among physicians, specialties, hospitals and even countries.

Typical ENT issues that arise in kids — ear infections, tonsillitis, sinusitis, etc. — may seem like run-of-the-mill pediatric conditions. But Sheyn is finding ways to innovate even the most commonplace of pediatric procedures.

Sheyn and his team are currently the only physicians in the area approved for a procedure to place ear tubes in an outpatient clinic setting. The procedure takes about five minutes with no general anesthesia and no need for a child to be NPO. With this in-office procedure, patients see immediate relief, avoid the risks of anesthesia and open a surgery

spot for another child.

But Sheyn sees the future of ENT becoming more specialized with each member of his team bringing their own expertise to a diverse and comprehensive ENT program.

“Our bread and butter will always be tubes and tonsillec-tomies, but at Le Bonheur we are able to flex our subspecialty muscles as well — that’s where pediatric ENT is headed,” said

MEET LE BONHEUR’S PEDIATRIC OTOLARYNGOLOGY TEAM



Anthony Sheyn, MD, FACS
Chief, Pediatric Otolaryngology
Clinical Expertise: Sleep Issues,
Head and Neck Cancer



Anas Eid, MD
Clinical Expertise: Pediatric
Facial Plastic Surgery, Pediatric
Trauma Reconstruction



C. Bruce MacDonald, MD
Clinical Expertise: Disorders
of Hearing and Balance,
Ear Surgery



Wade McClain, DO
Clinical Expertise: Pediatric
Airway Disorders



Celine Richard, MD, PhD
Clinical Expertise: Cochlear
Implant Surgery, Complex
Hearing Loss



Rosemary Stocks, MD
Clinical Expertise: Cleft
Palate Repair



Robert Tuliszewski, MD
Clinical Expertise: Facial,
Sinus and Skull-Based Diseases,
Brain Tumors

Sheyn. “Our ENTs are capable of doing everything, but each of us has our own subspecialties working together to cover all pediatric ENT issues.”

Sheyn’s subspecialty focus is head and neck cancer, caring for kids in a partnership between Le Bonheur and St. Jude Children’s Research Hospital — one of the largest programs in the country. Because of this partnership, Sheyn cares for a wide range of rare pathologies seen at only a few places in the world, making Memphis an international destination for pediatric head and neck cancer.

“My vision is for our ENTs to be leaders not just locally, but nationally, and reinforce Le Bonheur as a destination center for pediatric ENT.”

Anthony Sheyn, MD, FACS, Chief, Pediatric Otolaryngology

But the climate of collaboration also extends to other specialties at Le Bonheur Children’s. Sheyn provides ENT leadership for several multi-specialty programs, including a robust thyroid program with Pediatric Surgery and Pediatric Endocrinology.

“Working at Le Bonheur is rewarding; there is a spirit of helping people that doesn’t really exist anywhere else,” said Sheyn on the collaborative atmosphere.

Sheyn’s commitment to collaboration extends to his homeland of Ukraine. When the Ukrainian crisis erupted in 2021, Sheyn was quick to step up and offer his help for any children in need, especially as St. Jude Children’s Research Hospital helped to coordinate evacuation and care for more than 900 patients and families.

“It’s nice to be here in Memphis and be involved with Le Bonheur and St. Jude which are doing everything to help the country I came from. It reinforces my decision to come here, stay here and work,” said Sheyn.



Anthony Sheyn, MD, FACS, newly appointed chief of Pediatric Otolaryngology at Le Bonheur and UTHSC, examines a patient at ENT clinic. While Sheyn and his team care for the common ENT issues of childhood, they are also focused on subspecialization to create an expert and comprehensive ENT program.

Sheyn and his team aim to collaborate for the improvement of pediatric care around the globe through their research. On a national and international level, Sheyn and Le Bonheur’s ENTs work with other hospitals to develop protocols for pediatric thyroid tumors, salivary gland tumors and sarcomas of the head and neck. Closer to home, Sheyn uses Le Bonheur and UTHSC’s BIG Initiative, a pediatric DNA repository, to study hearing loss in African American children — a population that is under-researched.

At the end of the day, Sheyn is building a team that can conquer everything a child may face in the ENT realm, from the most complicated cancers and surgeries to commonplace sinus issues.

“We have access to so much complicated disease here, we can guide care of children on a national level,” said Sheyn. “My vision is for our ENTs to be leaders not just locally, but nationally, and reinforce Le Bonheur as a destination center for pediatric ENT.”

Anthony Sheyn, MD, FACS

Education and Training

University of Cincinnati College of Medicine – Medical School
Wayne State University – Head and Neck Surgery Residency
University of Texas Southwestern – Pediatric Otolaryngology Fellowship

Board Certifications

American Board of Otolaryngology

Society Memberships

American Head and Neck Society
American Academy of Otolaryngology – Head and Neck Surgery

Endocrine Committee
American Association of Clinical Endocrinologists
Pediatric Thyroid Cancer Disease State Clinical Review Writing Group Advisor
American College of Surgeons
American Society of Pediatric Otolaryngology
American Thyroid Association
Society for Ear, Nose and Throat Advances in Children
The Triological Society



Le Bonheur Critical Care Intensivist Sachin Tadphale, MBBS, MPH, (at left) and Medical Director of Infection Prevention Nick Hysmith, MD, MS, examine a patient in Le Bonheur's Pediatric Intensive Care Unit (PICU) where a decision support tool was implemented to reduce unnecessary blood cultures.

GOOD STEWARDS

National diagnostic stewardship initiative reduces blood culture, antibiotics overuse

Diagnostic stewardship can reduce blood culture overuse in the Pediatric Intensive Care Unit (PICU) and thereby reduce the use of broad-spectrum antibiotics, according to research published in *JAMA Pediatrics*. The research was published by the Bright STAR Authorship Group, which included Le Bonheur Children's Medical Director of Infection Prevention Nick Hysmith, MD, MS. He shared the results of a clinical

decision support tool developed by critical care intensivists in Le Bonheur's PICU led by Sachin Tadphale, MBBS, MPH. Results showed that implementation of a decision support tool for blood culture guidance reduced blood culture rates by 33% and the rate of broad-spectrum

antibiotic use by 8%.

Bright STAR is a national quality improvement collaborative that aims to



*Le Bonheur's Pediatric Intensive Care Unit (PICU) was one of 14 sites that participated in an effort to reduce unnecessary blood cultures. Results were published in *JAMA Pediatrics* and showed that diagnostic stewardship can reduce blood culture overuse and therefore reduce the use of broad-spectrum antibiotics.*

reduce over testing and bacterial culture overuse, also known as diagnostic stewardship, thereby decreasing antibiotic use and the potential for antibiotic resistance in critically ill children. Le Bonheur Children's Hospital was one of 14 sites that participated in this effort to reduce unnecessary blood cultures.

"Blood cultures are the gold standard to identify sepsis, but they can be taken excessively, typically leading to antibiotic use for non-specific symptoms," said Hysmith. "By reducing unnecessary blood cultures, we hoped to reduce the use of broad-spectrum antibiotics and the possibility of critically ill children developing antibiotic resistance."

Each site developed a clinical decision support tool to reduce blood cultures, targeting relatively stable patients with a fever but no additional signs of sepsis. The purpose of the tool was to determine which patients could be monitored without blood culture, where appropriate, after thoughtful evaluation. To measure the impact of this tool, analyses of specific outcomes were conducted 24 months before to 18 months after the new tool was implemented in each of the study sites. A project team was formed at each site to conduct a pre-implementation assessment and then develop a clinical decision support tool and implementation plan. The major goals were standardizing the decision to order

RESULTS FROM THE 14-SITE STUDY INCLUDED:

- Reduction in total blood cultures from 37,527 to 20,340.
- Reduction in blood culture rates at 13 of 14 sites.
- 33% relative reduction rate in mean number of blood cultures per 1,000 patient days per month.
- 13% relative reduction of total days of broad-spectrum antibiotic use per 1,000 patient days per month.
- 35% reduction in central line blood stream infection (CLABSI) rates.
- No change in *Clostridioides difficile* (C. diff) infection rates.
- Similar rates of PICU mortality, length of stay and readmission after implementation.
- Only one episode out of 793 positive blood cultures where the new clinical diagnostic tool may have delayed a blood culture.

a blood culture and highlighting any patient safety concerns. Le Bonheur implemented the decision tool in the PICU as well as the Intermediate Care Unit (IMCU) and Neuro Intensive Care Unit (Neuro ICU).

"The results of this study clearly show that creating an efficient clinical tool to identify the need for a blood culture can

safely reduce over testing in the PICU, and that reducing blood cultures can reduce antibiotic use as well," said Hysmith. "We're proud to be a part of this first multicenter collaborative effort to use diagnostic stewardship to reduce unnecessary blood cultures."

The Bright STAR Collaborative hopes to take these findings and implement them on a wider scale while monitoring for effectiveness and patient safety.

"By reducing unnecessary blood cultures, we hoped to reduce the use of broad-spectrum antibiotics and the possibility of critically ill children developing antibiotic resistance."

Nick Hysmith, MD, MS,
Medical Director of Infection Prevention



Providers from Le Bonheur coordinated the efforts to implement a decision support tool that led to reduced blood culture rates and broad-spectrum antibiotic use. Pictured above from left to right are Le Bonheur Critical Care Nurse Practitioner Morgan Bennett, MSN, FNP-C, CPNP-AC, Medical Director of Infection Prevention Nick Hysmith, MD, MS, Critical Care Intensivist Sachin Tadphale, MBBS, MPH, and Critical Care Nurse Practitioner Anna Jordan, MSN, PNP-AC.

Care Closer to Home

Le Bonheur inpatient pediatric unit in Jackson, Tenn., provides access to pediatric experts

It was unusual for Emily Morales to feel so fatigued. A very active 14-year-old, Emily participates in cheerleading, soccer and volleyball, just to name a few of her extracurricular activities. Her regular doctor's appointments never revealed anything out of the ordinary, but on the last day of school, she passed out and became unresponsive during May Day celebrations.

Emily needed specialized pediatric care. Quickly. Thanks to Le Bonheur's new satellite unit in Jackson-Madison County General Hospital, Emily was able to stay close to home while getting the care that she needed.

"It was the scariest experience of my life," said her mother, Edna Morales, who works in administration and provider relations at Le Bonheur's Outpatient Center in Jackson. "I feel blessed to have care so close to home where I feel comfortable and safe taking my child because I know she will be treated by the best pediatric experts."

Earlier this year, Le Bonheur Children's opened the 21-bed

inpatient unit in Jackson, Tenn. A collaboration with West Tennessee Healthcare, this unit improves the health status of West Tennessee children by increasing access to expert, specialized care close to home for children like Emily.

Emily was taken in an ambulance to Jackson-Madison

County General Hospital, where pediatric specialists on Le Bonheur's unit discovered an undetected urinary tract infection, dehydration and a viral infection. She was admitted to the new unit for a few days for fluids, medication and tests to make sure that there wasn't any further damage to her kidneys. Emily was able to get the care she needed promptly with no lingering health issues.



Because of Le Bonheur's inpatient unit in Jackson, Tenn., Edna Morales (left) was able to stay close to her daughter Emily during her hospital stay, while still being able to care for the rest of her family.

The Morales family is from a small town outside of Jackson, Tenn., and Emily was one of the first children admitted to the

"I feel blessed to have care so close to home where I feel comfortable and safe taking my child because I know she will be treated by the best pediatric experts."

Edna Morales, Emily's mom

new pediatric unit. Because of this unit, Emily was able to stay close to home, meaning that Edna could continue taking care of her other children while still having Emily close by.

“It’s just a huge impact to have the resources we need within our reach,” said Edna.

“Having that pediatric care so close to home

was so important. Otherwise, we would have ended up in an Emergency Department waiting for hours while Emily got worse, and she probably would have had to go to Memphis for the closest pediatric care.”



This year, Le Bonheur opened a pediatric inpatient unit inside of Jackson-Madison County General Hospital. This unit allows children like Emily Morales to remain close to home for her care.

Today, Emily is doing well and back to her active lifestyle. For the Morales family, it was a wakeup call not to take anything for granted, said Edna.

“Even though the unit had only been open a couple of days, you could see the little details that make it a Le Bonheur facility,” said Edna. “You

could see the compassion and care the staff had for Emily and for me and the passion to find out what was really going on.

I completely trusted that they were going to do the best thing for her.”



Le Bonheur in West Tennessee

Learn more about Le Bonheur Children’s presence in West Tennessee by visiting lebonheur.org/westtennessee.

Each year, Le Bonheur’s Outpatient Center in Jackson, Tenn., sees more than 8,000 children. With the opening of the 21-bed inpatient pediatric unit in Jackson-Madison County General Hospital, pediatric specialists will provide their expert care to the children of West Tennessee close to home.

Ronald McDonald House in West Tennessee



A groundbreaking ceremony was held recently for a new Hyatt Place hotel on the West Tennessee Healthcare Jackson-Madison County General Hospital campus. The hotel will also serve as a Ronald McDonald House for Le Bonheur Children’s pediatric patients, occupying the second floor of the hotel and including 20 rooms, a community kitchen and a living area for families who need a home away from home while their child receives medical care.



Therapy dogs provide a variety of developmental growth opportunities, including experiencing new textures, practicing balance and engaging in new social interactions.

Canine Care

NICU therapy dog program brings developmental enrichment to the smallest patients

Le Bonheur Child Life Specialist Anne Elizabeth Hattier, CCLS, envisioned one day bringing therapy dogs into Le Bonheur Children's Neonatal Intensive Care

Unit (NICU). In July of 2022, her vision came to fruition.

"We want to be intentional about supporting our youngest patients," said Hattier. "While

admitted, our patients don't leave the NICU, so we bring the normalizing experiences to them, enriching the hospital environment to maximize developmental stimulation and

hopefully minimize developmental delays or gaps.”

Only three hospitals across the country, including Le Bonheur, have programs that bring therapy dogs into the NICU. After just six weeks of the program, Hattier, parents and neonatologists in the unit have seen improvements in the lives of patients and families who experience the therapy dog program.

One of the biggest obstacles to the patients’ developmental progress in the NICU is the environment. Whether it’s the family encountering unfamiliar and complicated medical technology or a child’s limited access to typical daily experiences, families with children in the ICU are in need of as much support as the hospital can offer.

“Development is part of medical care,” said Le Bonheur Neonatologist Jennifer Davidson, DO. “Therapy dogs in the NICU are another way for us to think outside of the box for how to improve a child’s development and give parents a new way to interact with their children.”

Before the pandemic, therapy dogs visited the lobby of the NICU where families and staff members were afforded a break and boost in morale. Hattier says that even petting a dog can lower blood pressure and that this initial step served as emotional



Only three hospitals in the country, including Le Bonheur Children’s, have a therapy dog program in the Neonatal Intensive Care Unit (NICU). In its six months of operation, child life specialists and physicians have already seen improvements in the lives of their patients and families.

support and relief for families watching their children go through the unthinkable.

When toddlers became more commonplace in the NICU, opinion began to shift to allow dogs to work directly with the NICU patients. It made sense to fully incorporate therapy dogs into the programs available and provide new developmental growth opportunities.

In 2022, Hattier’s proposal for therapy dogs in the NICU was finally accepted after working with NICU leadership, infection prevention

and quality improvement to outline the developmental benefits of the program and establish the appropriate precautions for patient safety and health.

To be eligible to meet with a therapy dog, NICU patients must:

- **be at least 1 year old**
- **require no contact precautions**
- **have the neonatologist’s approval**
- **have permission from family**

The ICU therapy dogs visit the NICU first before any other units to

limit infection risk. Patients receiving the service enjoy 10 to 20 minutes of focused time with the therapy dog in a setting designed to maximize stimulation in order to increase developmental skills. They feel new textures as they pet the therapy dog's fur, learn balance as they stand and lean on the therapy dog and engage in new social experiences with others.

“This program can directly impact patient outcomes — we know that the more parents are with their kids in the NICU, the better the long-term outcomes.”

Jennifer Davidson, DO, Le Bonheur Neonatologist

“With our ICU therapy dogs, we see developmental benefits to patients’ social, emotional, cognitive and physical growth.” said Hattier. “I’ve watched caregivers become more confident engaging with their child and their medical equipment, as well as caregivers feeling excited about such a normalizing experience where they can bond, learn and grow together.”

Davidson echoes the positive effects of these therapy dog sessions. Not only do the sessions allow for the children to get crucial developmental experience and exposure, they also give parents the opportunity to be present and familiarize themselves with the medical equipment their children may be utilizing.

“Parents now have another way to interact with their children and see their child in an environment that’s not just medically focused,” said Davidson. “And this program can directly impact patient outcomes — we know that the more parents are with their kids in the NICU, the better the long-term outcomes.”

Hattier’s ultimate goal is for the NICU to have its own therapy dogs so more patients can benefit from access. She continues collaboration with the therapy dog handler, occupational therapists, physical therapists and



Le Bonheur Child Life Specialist Anne Elizabeth Hattier, CCLS, (right) was the leading force to bring therapy dogs into the Neonatal Intensive Care Unit (NICU). She is pictured here with therapy dog Storm and Debb Taylor, Storm’s handler and the director of Mid South Therapy Dogs & Friends.



Bringing a therapy dog into the NICU can provide opportunities for the entire family. Through the therapy dog program, the Westbrook family (above) became more comfortable handling their son Tre's medical equipment and had new chances to bond as a family.

“I get to watch our little friends grow developmentally in the hope of setting them up for success for the transition home with their families and, just for a little bit, it's not about being in the hospital. It's about playing together.”

Anne Elizabeth Hattier, CCLS, Le Bonheur Child Life Specialist

music therapists to make this program a success and maximize the developmental benefits for each individual patient's needs.



The therapy dog program operates in collaboration with occupational therapy, physical therapy and music therapy for the maximum developmental benefits for the needs of each patient. Pictured here, NICU patient Korbin works with the therapy dog and his occupational therapist.

“It's exciting to watch a patient warm up to the therapy dogs, gain emotional trust, explore normal experiences in a medical environment and increase their comfort level and excitement week to week with the therapy dogs,” said Hattier. “During the session, I get to watch our little friends grow developmentally in the hope of setting them up for success for the transition home with their families and, just for a little bit, it's not about being in the hospital. It's about playing together.”

Arnold, Brown named *MBJ* Health Care Heroes

Le Bonheur Chief of Pediatric Infectious Diseases Sandra Arnold, MD, MSc, and Le Bonheur Chief of Genetics Chester Brown, MD, PhD, were each named a Health Care Hero by the *Memphis Business Journal* (*MBJ*). This award salutes companies, individuals and organizations for their contributions to improving health care in Memphis and the Mid-South.



Sandra Arnold, MD, MSc



Chester Brown, MD, PhD

Arnold has played leadership roles in many efforts at Le Bonheur and the University of Tennessee Health Science Center (UTHSC) including Le Bonheur's Safe Sleep Initiative, UTHSC's Back-to-School Task Force and a trial for antibodies as a tool to fight COVID-19. Arnold is a professor at UTHSC. Brown is a professor and the St. Jude Chair of Excellence in Genetics at the University of Tennessee Health Science Center. He also oversees the Biorepository and Integrative Genomics Initiative (BIG) for Le Bonheur and UTHSC, a pediatric DNA repository.

Kink named to AAP leadership positions

Le Bonheur Emergency Medicine Specialist Rudy Kink, MD, was recently named to multiple leadership positions in the American Academy of Pediatrics (AAP). Kink will serve on the AAP Executive Committee for Transport Medicine and as a general member representative on the AAP Pediatric Education of Prehospital Professionals (PEPP) Steering Committee. Kink also serves as medical director of Pedi-Flite at Le Bonheur Children's.



Rudy Kink, MD

Cross named medical chief of Community Health and Regional Services

Le Bonheur Hospitalist Cynthia Cross, MD, FAAP, was recently named medical chief of Community Health and Regional Services at Le Bonheur Children's. In this role, Cross will provide medical leadership and coordination of satellite hospitals and referral centers to ensure consistently high quality pediatric care in satellite clinical settings. She will also provide medical leadership for Le Bonheur's community health programs. This is a strategically important role as Le Bonheur continues to work toward improving the health status of children in our local community in addition to expanding our clinical services across the region. Previously, Cross has served in many leadership positions at Le Bonheur, most recently as division chief of Hospital Medicine.



Cynthia Cross, MD, FAAP

Heart Institute designated as an IC-OS Center of Excellence

Le Bonheur's Heart Institute was recently designated a gold level Center of Excellence by the International Cardio-Oncology Society (IC-OS). IC-OS Centers of Excellence are programs that supply an exceptionally high concentration of expertise and related resources, delivering care in a comprehensive interdisciplinary fashion to afford the best patient outcomes possible for patients with cardiovascular disease related to cancer treatment.



Ridley-Pryor named to ILAE Leadership Development Program

Le Bonheur Nurse Practitioner and Director of Research Strategies and Collaboration for Pediatric Neurology at the University of Tennessee Health Science Center (UTHSC) Tracee Ridley-Pryor, DNP, PMHNP-BC, was named to the International League Against Epilepsy (ILAE) Leadership Development Programme 2022, which took place in conjunction with the 14th European Epilepsy Congress. The Leadership Development Programme supports the preparation and advancement of young physician leaders from select ILAE chapters around the world. Through this program, Ridley-Pryor will have a unique opportunity to receive leadership development training and network with rising leaders from around the globe.



Tracee Ridley-Pryor, DNP, PMHNP-BC

Gipson receives K23 NIH grant for TSC and autism research

Le Bonheur Pediatric Neurologist and Neurodevelopmental Disabilities Specialist Tanjala Gipson, MD, recently received a K23 grant from the National Institutes of Health (NIH) for her project "Early Communication in Tuberous Sclerosis Complex (TSC) and Its Prediction of Autism." The objective of this study is to examine potential predictors of language outcome and autism spectrum disorder (ASD) severity in infants with TSC. This project builds on previous research from Gipson that found deficits in early vocal development in most infants with TSC regardless of the diagnosis of ASD.



Tanjala Gipson, MD

Burroughs-Ray named Top 40 Under 40 Urban Elite Professionals

Congratulations to Le Bonheur Hospitalist Desiree Burroughs-Ray, MD, who was recognized as a Top 40 Under 40 Urban Elite Professional. The Top 40 Under 40 Urban Elite Professionals Awards honor rising African American Memphians who offer unique and innovative solutions to social problems, as well as those who shine in their respective professions.



Desiree Burroughs-Ray, MD

Bowden named chair of HPV Cancer Prevention Roundtable Executive Committee

Le Bonheur Pediatrician Michelle Bowden, MD, was named the chair of the Memphis and Shelby County HPV Cancer Prevention Roundtable Executive Committee. In this role, Bowden will determine the Roundtable's strategic plan and priorities, help develop and oversee local education events and vaccination opportunities and oversee recruitment of members in the community to collaborate for HPV cancer prevention.



Michelle Bowden, MD

This HPV Vaccination Roundtable is a group of individuals who share an interest and commitment to increasing HPV vaccination rates for cancer prevention in the local community and is part of the St. Jude Children's Research Hospital's HPV Cancer Prevention Program.

Yohannan inducted into UTHSC Academy of Master Educators

Le Bonheur Cardiologist Thomas Yohannan, MD, was recently inducted into the University of Tennessee Health Science Center (UTHSC) Academy of Master Educators. The Academy recognizes medical educators who consistently exemplify the highest standards of educational and clinical excellence; humanism and professionalism; innovation; leadership in their fields and mentorship. Master Educators will support the missions of and serve as ambassadors for the College of Medicine.



Thomas Yohannan, MD

Wright elected chair of AAP Section on Dermatology

Le Bonheur Chief of Pediatric Dermatology Teresa Wright, MD, was recently elected chair of the American Academy of Pediatrics (AAP) Section on Dermatology. In this role, she will lead other colleagues in developing policy, clinical guidelines and educational programming and in advocating for children. The Section on Dermatology is charged with stimulating research in Pediatric Dermatology and teaching and disseminating knowledge of Pediatric Dermatology through Academy channels and the medical profession at large.



Teresa Wright, MD

Endocrinology receives T1D “Outstanding Pediatric Team”

Le Bonheur’s Endocrinology division was recently named “Outstanding Pediatric Team” by the T1D Exchange Quality Improvement Collaborative. The team was selected from more than 50 peers in the T1D Exchange Quality Improvement network for exceptional leadership this year.



Heart Transplant Program receives Vanguard Center Award

Le Bonheur’s Heart Transplant Program was awarded the Vanguard Center Award from the Pediatric Heart Transplant Society (PHTS). The PHTS Vanguard Award recognizes individual centers for their outstanding contribution to the PHTS Registry.



Pediatric Heart Transplant Society



Pictured above is a rendering of the Seacrest Studio at Le Bonheur Children's. The state-of-the-art broadcast media center will provide opportunities for patients to explore radio, television and new media.

“Since the foundation’s inception, I have had the pleasure of witnessing the power that entertainment and creative expression has had on thousands of patients across the country,” said Ryan Seacrest. “I am thrilled to bring together the patients of Le Bonheur Children’s Hospital, their families and the Memphis community to continue sharing joyful and meaningful experiences as we make a slow and steady return to normalcy.”

Ryan made the announcement on “LIVE with Kelly and Ryan,” the award-winning syndicated morning television talk show he co-hosts with Kelly Ripa.

The Seacrest Studio at Le Bonheur Children’s will be used to provide a variety of programming to patients, whether they are physically in the studio or watching through a closed-circuit network from their rooms. Patients will have the opportunity to host their own radio and television shows, play games, watch live musical performances and interview celebrity guests. The studio will be encased in glass, allowing patients, staff and visitors to view the daily programming happening inside.

“At Le Bonheur Children’s, we are always

working to meet the physical, emotional and developmental needs of the more than 500,000 children we see each year. We strive to continually improve and enhance the Le Bonheur experience for patients, families and our staff,” said Le Bonheur President Michael Wiggins, DBA, FACHE. “Our new Seacrest Studio will bring entertainment and fun to patients and their families, in addition to boosting the morale of our pediatric experts. We are so

grateful to the Ryan Seacrest Foundation for choosing Le Bonheur for this studio.”

Seacrest Studios was built on the commitment to aid in the healing process of children receiving medical care at hospitals and their families. Its programming

allows children to tap into their creativity that helps them thrive, experimenting with radio and television broadcasting in these media centers while bringing an uplifting spirit to the hospital’s communities. Today, the Ryan Seacrest Foundation has successfully installed 11 broadcast media centers in pediatric hospitals nationwide, including in Atlanta, Boston, Charlotte, Cincinnati, Dallas, Denver, Nashville, Orange County, Orlando, Philadelphia and Washington D.C.

“Since the foundation’s inception, I have had the pleasure of witnessing the power that entertainment and creative expression has had on thousands of patients across the country.”

Ryan Seacrest



Le Bonheur physician, staff and patients celebrate the announcement that Le Bonheur Children's will be the site of the next Seacrest Studio. The studio is scheduled to open in early 2023.

Ryan Seacrest Foundation Taps Le Bonheur Children's as Next Seacrest Studio

Le Bonheur Children's Hospital has been selected by the Ryan Seacrest Foundation as the recipient of its next Seacrest Studio. These state-of-the-art broadcast media centers built in children's hospitals allow patients to explore a vast world of radio, television and new media while showing them a new realm of possibilities and potential careers.

Scheduled to open in early 2023, the 1,275-square-foot studio will be located prominently in the Event Space on the main lobby level at Le Bonheur. Seacrest Studios are charitable endeavors of the Ryan Seacrest Foundation, founded by media entrepreneur, radio personality and television host and producer Ryan Seacrest, and his family. The Ryan Seacrest Foundation hopes to contribute to children and their families' healing process and lift the spirits of the Le Bonheur staff.