PEDIATRIC NEPHROLOGY

ANSWERING THE CALL

Children's Mercy Kansas City

2018-19 Pediatric Nephrology Division Report

Children's Mercy

LOVE WILL.

Front and Inside Cover:
Jack was not thriving after birth and was eventually referred to Children's Mercy where he received a transplant from his father following a course of peritoneal dialysis. Jack's care, managed by Dr. Brad Warady, was featured in Season 3 of Inside Pediatrics. Watch Jack's inspiring story at InsidePediatrics.com.

Setting the Standard of Care in Pediatric Nephrology

Bradley A. Warady, MD

As pediatric nephrologists, all of us care for children who face some of the most severe and complex clinical challenges. We develop long-term relationships with our patients, especially when they need dialysis or a kidney transplant. We owe it to them to find answers—to solve the toughest problems—in order to help them heal.

That's what we are driven to do every day within the Nephrology Division of Children's Mercy Kansas City. Investigating the unknown and innovating in the face of adversity is our forte. How do we answer the questions that lead to better care for kids? Research.

Whether it is our leadership within the internationally recognized CKiD Study, the groundbreaking work coming out of our genomics lab or the NIH-funded investigations exploring ways to delay the progression of chronic kidney disease, we are continually expanding the knowledge base and setting the standard of care in pediatric nephrology—and that standard is excellence.

We are honored patients and families respect what we do. And we back it up with outcome data. Few other programs in the nation can match our dialysis-related infection rates, accompanied by a 100 percent three-year survival for kidney transplant patients and a 100 percent three-year graft survival. Our peers recognize how special that is, which is part of the reason we're once again ranked as one of the top ten nephrology programs by U.S. News & World Report.

We are very fortunate to have a team comprised of nephrology faculty with a full spectrum of expertise supported by exceptional partners from a variety of disciplines. Our patients don't just get expert nephrology care, they get expert pediatric care.

All of this leads to a special kind of care for kids and leading-edge discoveries in our field. I am proud to share this report featuring the latest in a long tradition of high-quality, meaningful experiences emerging from Children's Mercy.

Sincerely,

Bradley a Warady MD

Bradley A. Warady, MD
Director, Division of Pediatric Nephrology
Director, Dialysis and Kidney Transplantation, Children's Mercy Kansas City
Professor of Pediatrics, University of Missouri-Kansas City School of Medicine

Children's Mercy Division of Pediatric Nephrology

The Division of Pediatric Nephrology at Children's Mercy Kansas City provides a comprehensive, individualized approach to care rooted in the latest medical developments that lead to optimal outcomes. Led by Bradley A. Warady, MD, the program partners with families to improve care in practical and meaningful ways.

The program consistently achieves outcomes that are above national averages. One-year and three-year transplant patient and allograft patient survival rates are 100 percent. The program also is a national leader in collaboratives focused on reducing infections related to peritoneal dialysis and hemodialysis, developing treatment guidelines, and improving outcomes for patients with chronic kidney disease (CKD).

With the vast majority of CKD patients living into adulthood, Children's Mercy and the Division of Nephrology emphasize the lifetime of care for their patients and serve as leaders in defining best practices for managing the patients' transfer to adult care. Their multidisciplinary team has partnered with adult medicine providers, along with patients and their families, to develop and implement a robust transition education curriculum designed to promote successful self-management.

Children's Mercy is the Midwest clinical coordinating center for the National Institutes of Health (NIH)-funded Chronic Kidney Disease in Children (CKiD) study, which has produced more than 100 peer-reviewed articles and is changing the way treatment is provided to children with CKD around the world.

To learn more about how we are transforming outcomes for nephrology care, visit or call

childrensmercy.org/nephrology

Nephrology Office
(816) 234-3030

A TOP-RANKED PROGRAM

One of the top ten nephrology programs in the nation for nine consecutive years, according to *U.S. News & World Report*.

Children's Mercy vs. National averages

Overall Pediatric Kidney Transplant Graft Survival Percentage		
	Children's Mercy	National
1-Month Survival	100%	98.93%
1-Year Survival	100%	97.94%
3-Year Survival	100%	90.66%

Graft Survival After Transplant. http://www.srtr.org. October 2018

Overall Pediatric Kidney Transplant Patient Survival Percentage		
	Children's Mercy	National
1-Month Survival	100%	99.78%
1-Year Survival	100%	99.66%
3-Year Survival	100%	98.59%

Patient Survival After Transplant. http://www.srtr.org. October 2018

Hemodialysis Catheter-Related Infection Rates		
	Children's Mercy	SCOPE
Episodes/100 patient months	0	2.0

Children's Mercy data, 2018

Peritonitis Infection Rates		
	Children's Mercy	SCOPE
Infections per calendar year	0.17	0.41

Children's Mercy data, 2018

Bradley A. Warady, MD

Leading by Example

Children's Mercy plays a critical leadership role within many collaborations and studies researching solutions and therapies for children with chronic kidney disease (CKD) and end-stage kidney disease. Bradley Warady, MD, Professor of Pediatrics, University of Missouri-Kansas City School of Medicine and Director of the Division of Pediatric Nephrology; Director, Dialysis and Kidney Transplantation, leads a team that is nationally recognized for its clinical and research productivity.

"Because we are at the forefront of a variety of initiatives, we have the capacity to play a key role in their development and to incorporate findings into clinical care promptly," he said. "Everything we do is predicated on our goal of generating new knowledge with our research and to use what we have learned to improve patient outcomes."

Under Dr. Warady's leadership, the Children's Mercy Pediatric Nephrology Division serves as one of two coordinating institutions for the Chronic Kidney Disease in Children Cohort Study (CKiD), the largest study of children with CKD ever conducted in North

America. With the efforts of investigators and coordinators from more than 50 pediatric nephrology programs nationwide, the study has provided insights on interventions that have the potential of modifying the progression of CKD and the development of a variety of clinical complications. In August 2018, Dr. Warady helped secure an additional $4.8 million over the next five years from the National Institutes of Health (NIH) for Children's Mercy and CKiD, extending NIH support of this seminal study to a remarkable 20 years.

Children's Mercy and Dr. Warady are also among the leadership of the Standardized Care to Improve Outcomes in Pediatric End-stage Renal Disease (SCOPE) collaborative. To date, this important quality improvement collaboration of 48 participating pediatric dialysis centers from across the country has focused on the prevention of infections in pediatric peritoneal dialysis and hemodialysis patients by identifying and sharing effective strategies carried out in the SCOPE centers.

"Both CKiD and SCOPE have enjoyed great success in discovering and sharing key findings that impact patient outcomes that are then implemented around the world," Dr. Warady said. "There is nothing better than to have the opportunity to help coordinate clinical research with dedicated colleagues from across the nation and to then come up with concrete data that makes a difference in patient outcomes; that's how the whole community works together to do a better job caring for kids."

"All of the work we do is designed to improve care—to identify important medical questions and then to answer those questions and improve the standard of care in our field."

– Bradley A. Warady, MD

Dr. Warady's influential leadership extends beyond Children's Mercy. He is one of two physicians representing pediatric nephrology with Nephrologists Transforming Dialysis Safety (NTDS), a national initiative sponsored by the American Society of Nephrology and the Centers for Disease Control and Prevention working to decrease the risk of infections in both adult and pediatric dialysis patients. Dr. Warady is also on the executive committee of the International Pediatric Nephrology Association (IPNA), representing all pediatric nephrologists in the world. One of the most important aspects of IPNA's mission is to provide fellowship grants and training in nephrology in parts of the world where nephrology care has been nonexistent.

"We help provide much needed medical care for kids who are literally dying of preventable problems," he said. "Historically, these regions haven't had the support from experts in kidney care and the management of kidney disorders. We're successfully filling that void."

Dr. Warady also serves on the national board of the National Kidney Foundation (NKF), which he says demonstrates this influential organization's commitment to pediatric kidney disease. That commitment was evident in December 2018 when the NKF held the first-ever consensus workshop on CKD in children, where experts from around the world, patients and parents gathered to help better define the treatment recommendations for children with CKD.

Dr. Warady believes Children's Mercy will continue to be sought out as a leader in pediatric nephrology due to his team's relentless search for answers.

"All of the work we do is designed to improve care—to identify important medical questions and then to answer those questions and improve the standard of care in our field," he said. "This is exactly what we have done for decades, and what we will continue to do for years to come."

Preparing for the Transition of Care

Developing relationships is a key component of care at Children's Mercy. The Pediatric Nephrology Division team takes pride in frequently engaging patients and families as partners in a shared decision-making approach to care.

Seeking input from families has led to initiatives that enhance care as children grow and become more independent. The Children's Mercy Nephrology Transition Program helps teens and emerging adults develop the skills they require to enhance self-management and avoid future complications. The Save the Vein program, an initiative that has been embraced by patients, families and Children's Mercy staff, helps preserve the vasculature of the children who will experience a lifetime of renal replacement therapy.

"Not only do we tell parents they're our partners as we develop new initiatives, but we live up to that promise," Dr. Warady said. "We have regular meetings with patients and parents to talk about what works, what doesn't and what can we do better."

Partnering with adult nephrology caregivers is also essential. Children's Mercy is one of very few institutions to conduct regular workshops with adult nephrology care providers to ensure patients receive high-quality, uninterrupted care when transitioning to adult care.

"We get together to talk about issues that are relevant to both pediatric and adult care and ways we might make the transfer process easier and successful," said Judith Sebestyen VanSickle, MD, Pediatric Nephrologist and Assistant Professor of Pediatrics, University of Missouri-Kansas City School of Medicine. "We want to make sure that nobody drops the ball and that optimal care continues throughout the patients' lives."

With the active participation of nearly 40 nephrology care providers from Children's Mercy, the University of Kansas Health System and Saint Luke's Health System, the group has conducted six annual meetings to educate one another, to delineate issues to address, to discuss potential solutions and to assign the ongoing work that has to be done.

"An optimal transition program has to be designed collaboratively if it's to work because the process of transitioning and educating these kids starts as part of pediatric care, but it has to continue well into adult care," Amy Nau, RN, Division of Nephrology Service Line Director said. "Both teams have to buy into that philosophy."

The end result of the division's collaborative efforts with patients, parents and adult care providers, Dr. Warady says, is the discovery of new methods and better outcomes for kids.

"Every time we meet with parents and our adult nephrology colleagues, the patients will reap the rewards, and that's exactly what we strive for each and every day."

Providing Answers for Acute Cases

As Director of the Acute Kidney Injury program, Vimal Chadha, MD, Pediatric Nephrologist and Associate Professor of Pediatrics, University of Missouri-Kansas City School of Medicine, is well versed in some of the most complex and life-threatening cases in kidney care. Dr. Chadha's primary role is to help guide the management of patients with acute kidney injury in the Adelaide C. Ward Pediatric Intensive Care Unit, the Neonatal Intensive Care Unit and in non-ICU settings.

"Acute kidney injury remains an all-too-common problem with serious immediate and long-term consequences in critically ill patients," Dr. Chadha said. "Currently, there are no medications to treat AKI once it occurs, and the sickest patients are supported by a variety of dialysis therapies until the kidneys recover."

The team at Children's Mercy is working to optimize the care of these children. A recent study they conducted of patients on CRRT revealed the loss of substantial amounts of amino acids, which is potentially detrimental to young patients and especially infants. A second study showed prolonged CRRT leads to a negative calcium balance resulting in fragile bones and spontaneous fractures, a complication that can be modified with calcimimetic therapy in some patients. Dr. Chadha and his team presented the results of these studies at the 2018 Annual Pediatric Academic Societies Conference, and they are using this knowledge to improve the safety of dialysis therapies for the management of AKI.

In the last decade, Dr. Chadha says the emphasis has expanded toward identifying the patients at risk for AKI and modifying risk factors when possible.

Dr. Chadha and Children's Mercy participated in the multinational Assessment of Worldwide AKI, Renal Angina and Epidemiology (AWARE) study conducted in ICUs. Dr. Chadha, along with Dr. Warady and Ricky Ogden, PharmD, participate in the Nephrotoxic Injury Negated by Just in-time Action (NINJA) quality improvement project, which focuses on monitoring and reducing the risk of AKI secondary to nephrotoxic medications in non-ICU patients. As an extension of that project, Dr. Chadha and his team are currently taking this same approach to hopefully reduce the incidence of AKI in the PICU.

"Even mild AKI in critically ill patients increases their hospital length of stay and risk of death," he said.

He remains steadfast in his mission to make dialysis therapy for AKI safer for all children.

"For the last two decades, I have worked to improve the dialysis therapy provided to our sickest patients in ICU settings," Dr. Chadha said. "Contributing to the recovery of these patients is the most satisfying experience for me."

Vimal Chadha, MD

Getting Back to Basics

From bench to bedside, Tarak Srivastava, MD, Professor of Pediatrics, University of Missouri-Kansas City School of Medicine and Director of the Nephrology Research Laboratory, applies clinical knowledge to studies in his lab. He is passionate about his NIH-supported research to attenuate the progression of chronic kidney disease (CKD) mediated by hyperfiltration in children, and Children's Mercy is one of only a few institutions around the globe using bench research to investigate how biomechanical forces on podocyte cells mediate hyperfiltration injury.

Dr. Srivastava focuses his research on podocyte cell biology, its role in the pathophysiology and potential treatment of hyperfiltration injury, and in disorders such as nephrotic syndrome. Hyperfiltration is seen as the primary cause of early progression of CKD in children with congenital anomalies of the kidney and urinary tract (CAKUT).

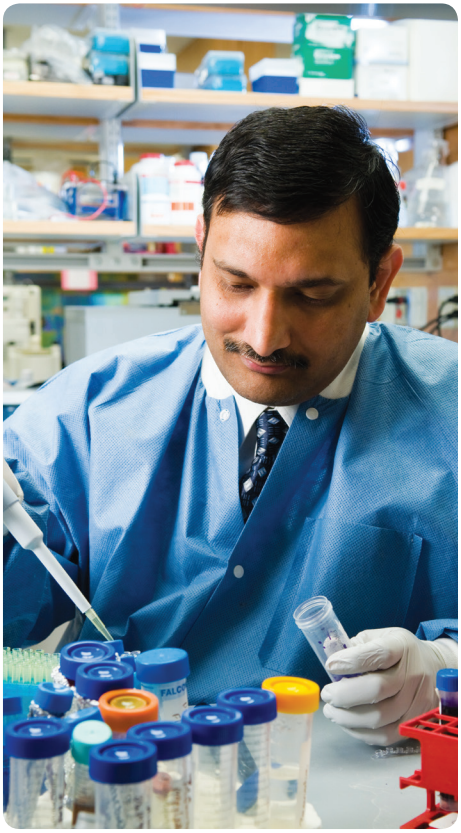
"The scientific literature is full of information connecting hyperfiltration to the progression of CKD, but no additional progress has been made in the past two decades since we learned about RAAS blockade," Dr. Srivastava said. "It is now time to tackle this problem once again and to hopefully find new therapeutic targets to address hyperfiltration-mediated injury."

Dr. Srivastava has been awarded $2 million in R01 funding from the NIH to try to mitigate hyperfiltration-mediated kidney injury by targeting prostanoid receptor EP2, one of the four PGE2 receptors, as a means of delaying the progression of CKD in children born with CAKUT. His hope is his findings will help children improve their quality of life by extending their time without renal replacement therapy.

Dr. Srivastava has been awarded $2 million in R01 funding from the National Institutes for Health

"If the results of our research turn out as anticipated based on our hypothesis, it will be a paradigm shift in our thinking of hyperfiltration-mediated injury and will open a novel therapeutic avenue to delay the progression of CKD," Dr. Srivastava said.

As Dr. Srivastava's research has developed from a concept to published, NIH-funded findings in recent years, it is evident the enzyme COX2 and its receptor EP2 are part of a critical pathway, which may play an important role in podocyte cell injury and have significant long-term implications for patients.



Tarak Srivastava, MD

Navigating Ethical Decisions

As the medical field evolves, ethics and bioethics continue to be key discussion topics in pediatric nephrology. Doctors often face life-threatening cases, and while there may be viable care options for the kids, the families may still choose to forgo treatment for a myriad of personal reasons.

"These situations often create ethical dilemmas," Dr. Warady said. "For instance, what role should families have in determining whether or not to provide dialysis to their infant? How should the limited availability of data on patient outcomes impact the answer to that question?"

Dr. Warady, in collaboration with John D. Lantos, MD, Director of Pediatric Bioethics; Professor of Pediatrics, University of Missouri-Kansas City School of Medicine, Laurel K. Willig, MD, Pediatric Nephrologist; Associate Professor of Pediatrics, University of Missouri-Kansas City School of Medicine, and other clinicians recently broached some of these tough questions in an article entitled Parents Refusing Dialysis for a 3-month-old with Renal Failure, written for the American Academy of Pediatrics.

The group's paper addressed the ethical principles doctors should keep in mind when making life-changing decisions with families. In this specific case, doctors recommended dialysis for a 3-month-old child with end-stage kidney disease; however, the family only wanted to pursue palliative care in order to spare their son from a lifetime of dialysis and transplant care and their other two children from the trauma this would potentially cause for the family. Among the central points addressed in the article were the importance of covering all treatment options in detail, as the family's perception of harm versus benefit may change with further clarification, and the options which would likely serve the child's best interests.

"What role should families have in determining whether or not to provide dialysis to their infant?"

– Bradley A. Warady, MD

"As medicine advances, we are able to successfully intervene when confronted with extremely complicated medical conditions," Dr. Willig said. "We are tasking families with weighing harms and benefits of more elaborate treatment plans while balancing cultural, financial and other interests."

In addition to moral dilemmas that may arise in the treatment of kids with end-stage kidney disease, the use and application of genetic information also has led to complicated questions for nephrologists, especially as genetics increasingly becomes an asset in translational research initiatives and clinical care.

"If we have genetic data on patients, but we don't know the implications of that data, what do we do with it? Do we share it with patients and families?" Dr. Warady asked. "We are just beginning to address these issues in the CKiD study, and we look forward to sharing what we learn with the pediatric community."

Most recently, Dr. Lantos and Ben Wilfond, MD, Treuman Katz Center for Pediatric Bioethics Director at Seattle Children's Hospital, have joined forces with the CKiD investigators, patients and parents to establish an ethics committee that tackles some of the ethical issues associated with not only the care of patients, but also the discovery of potential issues in patients who have a genetic predisposition for certain health issues.

"The CKiD parents are committed, well-informed, and insightful," Dr. Lantos said. "Working with them will shed light on some of the thorniest ethical issues that arise in studies like CKiD that use new tools of genomics to answer questions about the causes of complex, chronic diseases."


Laurel Willig, MD
NEPHROLOGY
PROFESSIONAL

Incorporating Genetic Information to Find Solutions

Not many nephrologists are also accomplished geneticists, but Laurel Willig, MD, Genomic Medicine Center Director, Associate Professor of Pediatrics, University of Missouri-Kansas City School of Medicine, is not like most pediatric nephrologists. She utilizes her skills and expertise in these fields to find clinical solutions for patients and families.

Among the first of its kind with a pediatric focus, the Genomic Medicine Center provides clinical genomic services and is an epicenter for genomic research. Dr. Willig's work currently involves examining genomic and transcriptomic drivers for cyst formation in autosomal dominant polycystic kidney disease (ADPKD). Partnering with the University of Kansas Medical Center, her studies use both a novel pig model of ADPKD and human samples to explore local genetic and transcription changes that occur during cyst formation.

"This disease is present at birth, but most of the studies have focused on adults with ADPKD because that is when the manifestations of disease typically become more severe and also when people usually become aware that they have disease," Dr. Willig said. "I hope to identify early drivers of disease and translate that information into pediatric therapies for patients with ADPKD. Ideally, this can, in part, help modify the severe manifestations that are often experienced by patients with ADPKD later in life."

"I hope to identify early drivers of disease and translate that information into pediatric therapies for patients with ADPKD."

– Laurel Willig, MD

This is a unique opportunity for Children's Mercy to partner with KU Medical Center, an international leader in PKD research, and to establish a robust program for pediatric ADPKD, which is rare in pediatric centers across the country.

In other translational tests, Dr. Willig's team is exploring the use of single-cell transcription techniques, coupled with other epigenetic information in blood and urine, to help identify markers of chronic allograft dysfunction in solid organ transplants that may help generate insight into the disease's pathophysiology.

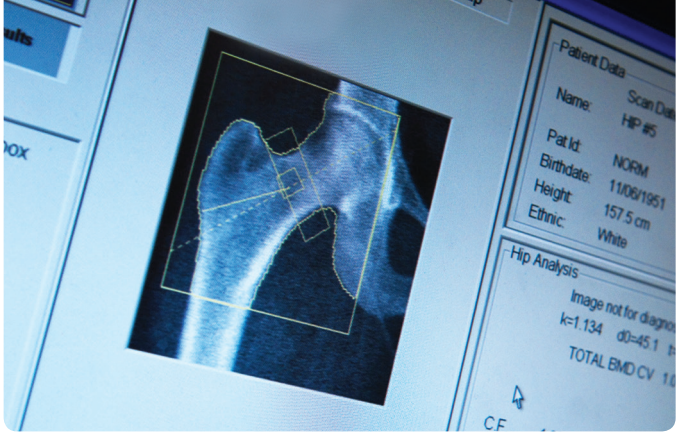
Although the team's focus is sequencing and analysis of rare inherited diseases in children, plans are underway for expansion into a translational cancer genomics program and the use of pharmacogenomics in precision medicine.

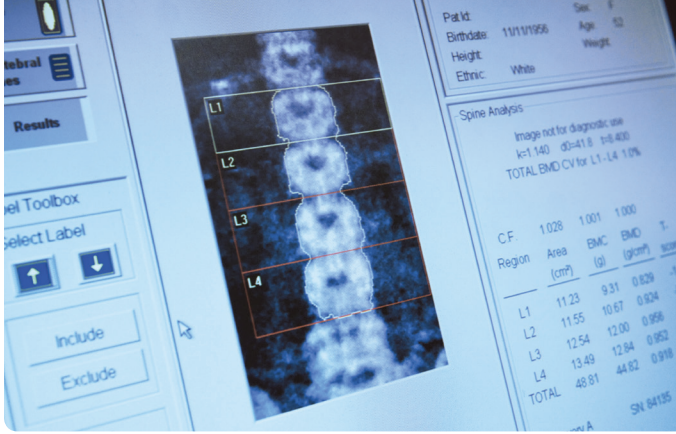
A self-described lifelong learner, Dr. Willig applies her unwavering curiosity toward her primary goal: to translate novel medical research into better ways of treating sick kids.

"I love genomics because of the constant influx of new knowledge and the promise it holds to really impact medicine and my patients," Dr. Willig said. "I think this field provides potential opportunities for me to provide truly individualized medical care to my patients."

Her commitment to the Genomic Medicine Center is leading to new breakthroughs in treating, diagnosing and preventing complex childhood diseases, which, in turn, has the potential to transform—and save—lives around the world.

Laurel Willig, MD





Pioneering Treatments for Bone and Mineral Disorders

Uri Alon, MD, Pediatric Nephrologist and Professor of Pediatrics, University of Missouri-Kansas City School ofMedicine, serves as the director of the Bone and Mineral Disorders Clinic. He and his team have established expertise in the use of bisphosphonates and anti-FGF 23 medication to prevent the loss of bone density, and they are pioneers in the use of calcimimetic medications to treat children with parathyroid disorders.

"Our treatment results in improved bone condition, and consequently fewer fractures and less pain," Dr. Alon said. "This equates to healthier lifestyles for afflicted children and improved quality of life."

The team's research has demonstrated differences in vitamin D metabolism among ethnic groups. They have shown normal blood levels of vitamin D in non-Caucasians may actually be lower than in Caucasians, which means there is less cause for concern when non-Caucasian children have lower values of vitamin D in their blood. The team's work also confirmed what is already well known in adults: bisphosphonates are effective in reducing bone pain. Additionally,

"Our treatment results in improved bone condition, and consequently fewer fractures and less pain."

– Uri Alon, MD

Dr. Alon says the clinic is making strides to protect patients who are receiving diuretics against their possible adverse effects on mineral and bone metabolism.

By developing new, more effective treatment strategies for both common and rare disorders, Children's Mercy continues to be an adaptive leader in the field.

"We are spearheading the novel use of medications like bisphosphonates, calcimimetics and anti-FGF23 medications to find answers for complicated conditions and abnormalities in bone and mineral metabolism," Dr. Alon said. "It is meaningful to be positively impacting not only the child, but the entire family."

Uri Alon, MD


Children's Mercy

Judith VanSickle, MD

Enhancing Outcomes Through Efficiencies

By integrating Lean processes borrowed and adapted from the manufacturing industry, a team of doctors at Children's Mercy within the Division of Pediatric Nephrology is finding new opportunities to enhance care.

"Our Lean System is a proven method that focuses on streamlining processes to become more agile and innovative, to reduce waste and costs, and to improve patient, family and employee satisfaction," said Judith VanSickle, MD, Pediatric Nephrologist and Assistant Professor of Pediatrics, University of Missouri-Kansas City School of Medicine.

Lean processes are a set of operating philosophies and methods that help create maximum value by reducing waste and waits. Much of the Nephrology Division's Lean project focuses on enhancing communication, especially between providers at the time of transitions of care. Transitions, or hand-offs, can present serious threats to patient safety. These transitions can occur within hospital settings when a patient moves from one floor to another, as well as at the time of admission or discharge from the hospital.

"Our division cares for children with highly complex medical needs,

and many of these children frequently transition between the inpatient and outpatient settings," said Darcy Weidemann, MD, Pediatric Nephrologist and Assistant Professor of Pediatrics, University of Missouri-Kansas City School of Medicine. "An unstructured transition relying on verbal communication alone or one without specific personnel assigned to key tasks and action items can result in substandard care, patient dissatisfaction, increased health care costs and can potentially lead to serious safety events."

In fact, one study from Academic Medicine estimates 80 percent of serious medical errors involve miscommunication during the hand-off between medical providers. The Joint Commission, the U.S. Agency for Health Research and Quality, the Alliance of Independent Academic Medical Centers and various other groups have identified improved transitions of care as a crucial national patient safety goal.

"Lack of communication or information sharing can lead to delays in care or variations from the care plan," said Nathan Beins, MD, Pediatric Nephrologist and Assistant Professor of Pediatrics, University of Missouri-Kansas City School of Medicine. "Our intention with our Lean project is to avoid these problems."

The team has already identified and worked on several work processes to improve patient care and safety by using LEAN techniques, including standardizing components of the initial hospital stay for pediatric renal transplant recipients, improving the nutritional status and safety of pharmacological intervention during hospitalizations and shortening the length of hospital stays.

As with the introduction of any new organizational process, the team knew there would likely be some resistance to change, but they were prepared to manage any reticence.

"We are thrilled to see medical errors and patient morbidity decreasing since we have been using standardized care methods."

– Judith VanSickle, MD

"This new process is a change of practice and does require some lead-in work by admitting physicians and team members," Dr. Beins said. "We addressed this by ensuring all members of our division were well informed about the purpose of our project and by emphasizing the benefits we were confident could be achieved if the process was incorporated into our daily practice."

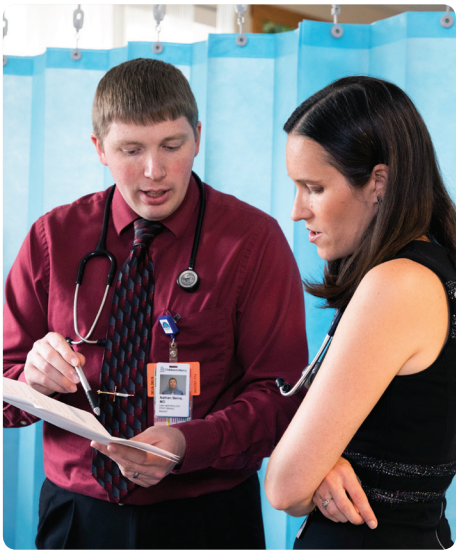
To get buy-in from the entire division, the team knew clear communication was essential for staff engagement, as was establishing easy-to-use tools, premade templates and designated roles for each team member.

"I think staff are recognizing it's not just another form you have to fill out, but this process actually leads to improved efficiency during our daily work tasks, better health care delivery for our patients and hopefully improved job satisfaction for faculty and staff," Dr. Weidemann said.

Although the initiative is still relatively new, the Division of Nephrology already has seen evidence of improved outcomes with fewer medication errors and decreased cost of care and length of hospitalization after implementing Lean processes. Dr. VanSickle says the success of this project shows sometimes the best solutions require looking at the issues from a new perspective.

"We are thrilled to see medical errors and patient morbidity decreasing since we have been using standardized care methods," Dr. VanSickle said. "Sometimes we just need to take a step back to analyze our process and ask the question: 'Is this the best way?'"

As a result of the Nephrology Division's success, the team has been asked to help apply what they have learned as the new standard of care for other divisions within Children's Mercy.



Nathan Beins, MD and Darcy Weidemann, MD

Division Director

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Children's Mercy Kansas City

Children's Mercy Kansas City is an independent, non-profit 366 licensed bed pediatric health system, providing more than 600,000 patient encounters yearly. With a medical staff of more than 750 pediatric subspecialists, we care for children from all 50 states and from around the world. In addition, our leadership in pediatric genomic medicine and individualized pediatric therapeutics is driving research and innovation in neonatology, nephrology, endocrinology, gastroenterology, neurology, heart, cancer and other subspecialties to transform outcomes for children. Children's Mercy is also nationally recognized for innovation in psychosocial care and creating a family-centered environment focused on the unique needs of hospitalized children and their families. Our love for children powers everything we do, inspiring our research, innovations and our everyday care. Because love has no limits. And with it, neither do we.

PEDIATRIC NEPHROLOGY

Children's Mercy
KANSAS CITY

LOVE WILL.

To learn more about how we are transforming outcomes for nephrology care, visit childrensmercy.org/nephrology

Nephrology Office: (816) 234-3030

For transport, admissions or consults, call:
1 (800) GO MERCY / 1 (800) 466-3729

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