

# Achieving Transplant Excellence Through Personalized Medicine

Children's Mercy Kansas City is recognized as one of the top 10 nephrology programs in the nation by U.S. News & World Report, and the kidney transplant program has incorporated a number of innovative practices into their management plan that are designed to enhance patient outcomes. Join us as Dr. Bradley Warady discusses how the program's personalized approach to meeting each patient's unique needs — including repeated surveillance biopsies, epitope matching and pharmacokinetic assessment of immunosuppressive medication — has contributed to a 100% three-year patient and graft survival rate for the past six years.



Featured Speaker:

## Bradley Warady, MD

Dr. Warady is Director of the Division of Nephrology at Children's Mercy and Director of Dialysis and Transplantation. In spring 2015, Dr. Warady was presented with the Henry L. Barnett Award for outstanding teaching and clinical care for children with kidney disease by the American Academy of Pediatrics Section on Nephrology. Dr. Warady's previous awards include the National Kidney Foundation's 2013 J. Michael Lazarus Award for enhancing the clinical care of patients on dialysis or with chronic kidney disease (CKD) and the Patrick and Virginia Clune Award of Excellence by the National Kidney Foundation of Kansas and Western Missouri. Dr. Warady is Professor of Pediatrics at the University of Missouri-Kansas City School of Medicine. His major areas of research are chronic kidney disease and end-stage renal disease (ESRD) management of children. He is the senior editor of two leading books in the field, "Pediatric Dialysis" and "Pediatric Dialysis Case Studies." He is also Co-Principal Investigator of the NIH funded "Chronic Kidney Disease in Children (CKiD) Study", the largest study of CKD in children ever conducted in North America.

### **[Learn more about Bradley Warady, MD](https://www.childrensmercy.org/profiles/bradley-a-warady/)**

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Transcription:

Melanie: Children's Mercy, Kansas City is recognized as one of the top 10 nephrology programs in the nation by US News & World Report and the kidney transplant program has incorporated a number of innovative practices into their management plan that are designed to enhance patient outcomes.

Welcome to Transformational Pediatrics with Children's Mercy, Kansas City. I'm Melanie Cole. And joining us today to talk about achieving transplant excellence through personalized medicine is my guest, Dr. Bradley Warady. He's the Director in the Division of Nephrology, and he's also the Director of Dialysis and Transplantation at Children's Mercy, Kansas City. Dr. Warady, it's a pleasure to have you join us today. Please tell us a little bit to start about your hospital's history with kidney transplant.

Dr Bradley Warady: Well, thanks again for inviting me back. We've been doing kidney transplants for more than 25 years. You know, kidney transplants are essential for children who develop what we call

end-stage kidney disease. While many of those children may initially receive dialysis to help support their overall wellbeing after their kidney fails, dialysis is always a bridge to transplant and what we hope in all cases is that children who developed kidney failure can in fact receive a kidney transplant.

Melanie: Well, Children's Mercy has achieved, sustained success in both graft and patient survival for pediatric kidney transplant. What is the secret to the program's success, Dr. Warady? Share it with other providers.

Dr Bradley Warady: Yes. I don't want it to be a secret. I want to share what we do. We have been exceptionally successful, thankfully. And in fact, one of the metrics that is followed nationally is the three-year graft survival rate, how long do a kidney transplant lasts, and we look at it, you know, what's happened after three years after the transplant. And at Children's Mercy, we've had 100% survival of those kidneys over the past six years. So we're doing something right.

And, when I look at what we're doing, I think there's a number of things that we do to really try to personalize the therapy to the kids. Number one, what we do is actually do what we call surveillance kidney biopsies. So that after a child receives a kidney transplant, we actually will biopsy their kidneys. Take a small piece of the tissue of the kidney at six months, at 12 months and at 24 months after the transplant so that, in addition to our regular assessment of their blood tests, we actually look at the kidney tissue itself to make sure it's healthy and that there is nothing there that would suggest the need for alteration of therapy for that individual patient. So surveillance biopsy is very important. We've done this for years and we recently published our experience with this in the Journal of Pediatric Nephrology.

The second thing that I think we do that is maybe beyond the standard of care is we individualize the approach to the medical therapy. There's a specific medication called mycophenolate mofetil and that's a very important medicine that helps prevent rejection. And we do what we call it a kinetic assessment. We sort of see how the body metabolizes that medication in that individual patient, and then we again provide the dose of medicine that specifically meets the needs of that patient.

So as opposed to all patients getting the same, for instance, weight-related dose of the medicine, we base it upon how that individual's body sort of, again, metabolizes that drug, what levels result from that, and then again modify the dose specific to the child. So we really have a personalized approach to medicine, which I think is the optimal approach for any child who has a kidney transplant.

Melanie: Well, it certainly is. And as you go on with this personalized approach and this personalized medicine to transplant, tell us about how important the multidisciplinary approach is for these patients and what type of providers are involved as it continues.

Dr Bradley Warady: Yeah, that's a great question. It's certainly exceedingly important that one has a team that addresses all the needs of that pediatric transplant recipient. So of course, they need to have a good transplant nephrologist, transplant kidney doctor, and an excellent transplant surgeon, which we have at Children's Mercy.

But it's so much more than that, because when we care for children with kidney transplants, we're caring for the entire child and not just the kidney. And so we have to have our transplant coordinators or our nurses, who do so much to continue the close follow-up of those patients. We have our

pharmacologists, who help us again identify the optimal medication dosages for these children.

We have our psychologist. You know, children, who have kidney failure, many of them have issues that they need to deal with, because they're a little different, if you will, than their healthy peers. And so the psychologist is critically important, not only to help them through these challenges, but also to address the issue of adherence, making sure that the children get all the medicines that's prescribed to them. We have child life individuals that again are important for these kids to help them get through any kind of procedures that they must go through during the hospital course.

And then we have dieticians, you know, for children. Obviously, they're growing and developing and so they need to have optimal nutrition to again grow just like any other child. But sometimes that can be even more complicated in a child who's a transplant recipient. So it's all of those individuals, plus all the other specialists at Children's Mercy that provides, I think, the multidisciplinary care that is again, exceedingly important for these children if we hope that they have the best possible outcome.

Melanie: It certainly is, and thank you for that answer. Children's Mercy's a research leader when it comes to pediatric kidney disease. What have you learned, Dr. Warady? And while you're telling us what you've learned when it comes to kidney transplant, tell us what's on the horizon and some of the latest exciting research in kidney disease and transplantation

Dr Bradley Warady: Well, I think we're always learning more. You know, I think that we're always trying to enhance and optimize the medical therapy that we're giving to children and adults who have kidney transplants. And we continue to sort of fine tune the therapies so that we're giving kids the most efficacious therapy with the least amount of side effects associated with the medications that we provide.

I think another important area of research that we're actively involved with is recognizing the issues that helps us optimize the transfer from pediatric to adult care. You know, that's a very highly anxiety-provoking move when you take a child who's grown up for instance at Children's Mercy Hospital over 21 years, and then you tell them now it's time to move to adult care and receive your care from the adult transplant team, and in Kansas City, that may be St. Luke's hospital or KU Med Center.

And so we have to make sure that we are educating our children and their families about their disease, about how they care for the disease, about other issues, such as their nutritional issues about insurance issues and a whole host of things, so that they are prepared and confident when they move from pediatric to adult care.

Historically, that didn't happen. And a lot of times, the care, if you will, fell off when they moved to adult care in some situations, because the kids never went to see their adult provider, because that individual was foreign to them. We recognize that that was not an optimal situation. And so now we begin the whole education of transition and transfer when they're 12 years of age. And we continue to provide more and more education over the course of those subsequent eight or nine years, so that everybody feels educated well-prepared and confident when they move from pediatric to adult care.

Melanie: Dr. Warady, as we wrap up, what would you like to tell other providers about the importance of early referral to the specialists at Children's Mercy, Kansas City?

Dr Bradley Warady: Well, thanks for that question. That's an important question. You know, in most cases, children develop chronic kidney disease over time and they progressively develop end-stage kidney disease, and again, the need for what we call kidney replacement therapy. In some children, as many as 25% of children, they can go from chronic kidney disease, right to transplant and never having to experience dialysis. And so early referral to a nephrology center like Children's Mercy can facilitate that experience. And I think any possibility, any situation where we can conduct what we call preemptive transplant, moving directly from chronic kidney disease to transplant without dialysis is certainly something that's well-received and to the benefit of those children.

Melanie: What an important topic we're discussing today and such a comprehensive approach to achieving transplant excellence through personalized medicine. Thank you so much, Dr. Warady for joining us today.

And this has been Transformational Pediatrics with Children's Mercy, Kansas City. To refer your patient or for more information, please visit [childrensmercy.org](http://childrensmercy.org) to get connected with one of our providers or you can listen to more podcasts at [transformpediatrics.childrensmercy.org](http://transformpediatrics.childrensmercy.org), the Transformational Pediatric series. Please remember to subscribe, rate and review this podcast and all the other Children's Mercy podcasts. I'm Melanie Cole.

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