Clinical Policy: Pediatric Kidney Transplant

Reference Number: LA.CP.MP.246 Coding Implications
Date of Last Revision: ~~10/22~~09/23 Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Kidney transplantation is the preferred treatment option for pediatric patients with advanced chronic kidney disease (CKD) and end stage renal disease (ESRD).[1-,2,3,4] This policy establishes the medical necessity requirements for pediatric kidney transplants.

The criteria below are sourced from Kidney Disease: Improving Global Outcomes (KDIGO) 2020 clinical practice guideline on the evaluation and management of candidates for kidney transplantation[5], the KDIGO 2022 clinical practice guideline for the prevention, diagnosis, evaluation, and treatment of hepatitis C in chronic kidney disease[6], and the 2015 Organ Procurement Transplant Network (OPTN) educational guidance on patient referral to kidney transplantation[1].

The criteria below are derived from professional guidelines that experts in the field developed by systematically examining current evidence regarding the risks and benefits of kidney transplantation, based on specific conditions and suitability of transplant candidates. The guidelines utilized for the below criteria consider the complexity of transplant candidate selection and the various risk factors for poor transplant outcomes. They provide recommendations on the evaluation and management of potential transplant candidates and suitability for kidney transplantation as an effective treatment option to improve quality of life, improve growth rates in children, and increase survival. Given the rigor of the guidelines on which this policy is based, the benefits of receiving a kidney transplant in pediatric individuals meeting the criteria below outweigh the potential risk of adverse outcomes related to receiving a transplant that is not indicated or not receiving a transplant that is indicated.

Policy/Criteria

I. It is the policy of Louisiana Healthcare Connections that pediatric kidney transplantation for pediatric members/enrollees (age < 18) is **medically necessary** when all of the following conditions are met:

A. Advanced renal disease including one of the following:

1. End stage renal disease (ESRD) (stage 5) with glomerular filtration rate (GFR) ≤< 15 mL/min/1.73m^2;[5]

~~2.~~ Chronic kidney disease (CKD) (stage 4) with GFR ≤< 30 mL/min/1.73m^2 ~~or GFR > 30 mL/min/1.73m^2 with rapid progression toward end-stage renal disease (ESRD), and all of the following:~~

~~a. Irreversible renal disease;~~

2. ~~b. Symptoms~~in member/enrollees who are ~~refractory~~expected to ~~medical management (eg, uremic neuropathy, pericarditis, mental status changes, severe fatigue, pruritus, nausea, muscle cramps, unintentional weight loss).~~reach ESRD[1,5]:

~~**~~ **Note**: Patients with a GFR above 30 mL/min/1.73^2 who are rapidly progressing toward ESRD should be referred for kidney transplant ~~evaluation~~evaluation[1].

B. Does not have any of the following contraindications:
   1. Active infection that is not properly treated, ~~including but not limited to, acute~~except for hepatitis C virus ~~infection with elevated International Normalized Ratio (INR) or transaminitis;~~infection[5,6]~~;~~
   2. HIV infection with detectable viral ~~load~~load[5];
   3. ~~Malignancy~~Active malignancy with high risk of recurrence or death related to ~~cancer~~cancer[5];
   4. ~~4.~~ Stroke~~, acute coronary syndrome, or myocardial infarction (excluding demand ischemia)~~ within the past 6 months or transient ischemic attack within the past 3 months~~;~~
   5. ~~Severe, life threatening extrahepatic multi-organ mitochondrial disease;~~
   6. ~~Septic shock;~~
   7. ~~Progressive cognitive impairment;~~
   8. ~~8.~~4. ~~Other severe uncontrolled medical condition expected to limit survival after~~. (If member/enrollee has had a myocardial infarction, clearance from a cardiologist is required prior to kidney transplant)[5];
   5. Active symptomatic cardiac disease (e.g., angina, arrhythmia, heart failure, valvular heart disease) that has not been evaluated by a cardiologist[5];
   6. Active symptomatic peripheral arterial disease not properly managed[5];
   9. ~~9.~~7. Inability to adhere to the regimen necessary to preserve the transplant, even with caregiver ~~support~~support[5];
   10. ~~Absence of an adequate or reliable social support system;~~
   11. ~~11.~~8. Active or ongoing substance use ~~or dependence including current tobacco use, vaping, marijuana smoking, or IV drug use without convincing evidence of risk reduction behaviors, such as meaningful and/or long-term participation in therapy for substance abuse and/or dependence. Serial blood and urine testing may be used to verify abstinence from substances~~disorder that ~~are of concern;~~affects decision-making or puts the member/enrollee at a high level of post-transplant risk[5];
   12. ~~12.~~9. Acute pancreatitis within the last 3 ~~months~~months[5];
   13. ~~13.~~10. Decompensated cirrhosis unless candidate for combined liver-kidney ~~transplant~~transplant[5];
   14. ~~Active gastrointestinal disease including symptomatic peptic ulcers, diverticulitis, inflammatory bowel disease, or gallbladder disease;~~
   15. ~~Surgical contraindications (eg, urologic or vascular problems);~~
   16. ~~16.~~11. Elevated levels of circulating antiglomerular basement membrane antibodies~~;~~.[5]
   17. ~~Severe irreversible multisystem organ system failure not correctable by organ transplant.~~

Background

Kidney transplantation is an effective treatment option for advanced chronic kidney disease (CKD) and end stage renal disease (ESRD~~)~~), as it improves quality of life and increases patient survival in comparison to dialysis.[1-,2,3,4] Decline in growth rate is a common complication in children with CKD, and poor growth can indicate disease severity and be associated with substantial morbidity

and mortality.[3] Kidney transplantation can prevent and improve growth failure, particularly in young children under six years of age.[2-,3]

Determining candidates for kidney transplantation requires a multidisciplinary care team approach and careful consideration of the individual's unique situation. In the pediatric patient population, preemptive kidney transplantation proves to be the most successful treatment option for ESRD, due to having the highest graft survival rates and the lowest mortality rates. Preemptive or primary transplantation is when kidney transplantation is the first treatment for ESRD and typically involves a transplant from a living donor related to the patient. Preemptive kidney transplantation is also an optimal treatment option because it allows patients to receive treatment before side effects and potential medical complications arise from dialysis.[2]

According to the 2020 Kidney Disease: Improving Global Outcomes (KDIGO) clinical practice guidelines regarding the evaluation and management of kidney transplant candidates, it is recommended that the cause of ESRD be determined, when possible, in order to be better informed of risks and management for patients following kidney transplantation.[5] According to the North American Pediatric Renal Trials and Collaborate Studies (NAPRTCS) registry from 1987 to 2017, 30% of pediatric kidney transplant recipients have primary diagnoses that involve congenital anomalies of the kidney and urinary tract, such as renal dysplasia, renal aplasia, renal, hypoplasia, and obstructive uropathy.[2] Additional underlying etiologies for pediatric kidney transplant recipients include hereditary kidney disease, reflux nephropathy, pyelonephritis, interstitial nephritis, hemolytic uremic syndrome, and acquired glomerular disease, such as focal segmental glomerulosclerosis and lupus nephritis.[2,4]

Coding Implications

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NOTE: Coverage is subject to each requested code's inclusion on the corresponding LDH fee schedule. Non-covered codes are denoted (*) and are reviewed for Medical Necessity for members under 21 years of age on a per case basis.

CPT® Codes	Description
50300	Donor nephrectomy (including cold preservation); from cadaver donor, unilateral or bilateral

CPT® Codes	Description
50320	Donor nephrectomy (including cold preservation); open, from living donor
50323*	Backbench standard preparation of cadaver donor renal allograft prior to transplantation, including dissection and removal of perinephric fat, diaphragmatic and retroperitoneal attachments, excision of adrenal gland, and preparation of ureter(s), renal vein(s), and renal artery(s), ligating branches, as necessary
50325*	Backbench standard preparation of living donor renal allograft (open or laparoscopic) prior to transplantation, including dissection and removal of perinephric fat and preparation of ureter(s), renal vein(s), and renal artery(s), ligating branches, as necessary
50327	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; venous anastomosis, each
50328	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; arterial anastomosis, each
50329	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; ureteral anastomosis, each
50340	Recipient nephrectomy (separate procedure)
50360	Renal allotransplantation, implantation of graft; without recipient nephrectomy
50365	Renal allotransplantation, implantation of graft; with recipient nephrectomy
50370	Removal of transplanted renal allograft
50380	Renal autotransplantation, reimplantation of kidney
50547	Laparoscopy, surgical; donor nephrectomy (including cold preservation), from living donor

HCPCS Codes	Description
S2152*	Solid organ(s), complete or segmental, single organ or combination of organs; deceased or living donor(s), procurement, transplantation, and related complications; including: drugs; supplies; hospitalization with outpatient follow-up; medical/surgical, diagnostic, emergency, and rehabilitative services, and the number of days of pre- and posttransplant care in the global definition

Reviews, Revisions, and Approvals	Review Date	Approval Date
Policy rebranded from corporate	10/22	1/14/23
Annual review. Description updated to include source information for policy criteria. Updated Criteria I.A.1. from glomerular filtration rate (GFR) ≤ 15 mL/min/1.73m2 to GFR < 15 mL/min/1.73m2 to align with Kidney Disease: Improving Global Outcomes (KDIGO) guidance and Organ Procurement Transplant Network (OPTN) guidance. Updated Criteria I.A.2. to include members/enrollees with CKD stage 4 with GFR < 30 mL/min/1.73m2 who are expected to reach end stage renal disease (ESRD) to align with KDIGO guidance and OPTN guidance. Updated contraindications in I.B. consistent with KDIGO	09/23	

Reviews, Revisions, and Approvals	Review Date	Approval Date
guidelines. References reviewed and updated. Note for non-covered codes added.		

~~**References**~~
References

1. Health Resources and Services Administration, U.S. Department of Health & Human Services - Organ Procurement & Transplantation Network. Educational Guidance on Patient Referral to Kidney Transplantation. https://optn.transplant.hrsa.gov/professionals/by-topic/guidance/educational-guidance-on-patient-referral-to-kidney-transplantation/. Published September 2015. Accessed ~~August 08, 2022~~July 16, 2023.
2. McDonald, RA. Kidney transplantation in children: General principles. UpToDate. www.uptodate.com. Published January 03, 2022. Accessed ~~August 02, 2022~~July 16, 2023.
3. Tönshoff, B. ~~Prevention and management of growth~~Growth failure in children with chronic kidney disease~~.~~: Prevention and management. UpToDate. www.uptodate.com. Published ~~September 11, 2020. Accessed~~ August ~~8~~31, 2022. Accessed July 16, 2022.
4. Cho MH. Pediatric kidney transplantation is different from adult kidney transplantation [published correction appears in Korean J Pediatr. 2018 Aug;61(8):264]. *Korean J Pediatr*. 2018;61(7):205~~-~~ to 209. doi:10.3345/kjp.2018.61.7.205
5. Chadban SJ, Ahn C, Axelrod DA, et al. KDIGO Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation. *Transplantation*. 2020;104(4S1 Suppl 1):S11~~-~~ to S103. doi:10.1097/TP.0000000000003136
6. Kidney Disease: Improving Global Outcomes (KDIGO). KDIGO 2022 Clinical Practice Guideline for the Prevention, Diagnosis, Evaluation, and Treatment of Hepatitis C in Chronic Kidney Disease. *Kidney Int*. 2022;102(6S): S129 to S205.

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Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. LHCC makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved.

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