

# Clinical Policy: Pediatric Kidney Transplant

Reference Number: MC.CP.MP.246

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## Description

Kidney transplantation is the preferred treatment option for pediatric patients with advanced chronic kidney disease (CKD) and end stage renal disease (ESRD).<sup>1,2,3,4</sup> 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<sup>5</sup>, the KDIGO 2022 clinical practice guideline for the prevention, diagnosis, evaluation, and treatment of hepatitis C in chronic kidney disease<sup>6</sup>, and the 2015 Organ Procurement Transplant Network (OPTN) educational guidance on patient referral to kidney transplantation<sup>1</sup>.

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.

*Note: For criteria applicable to non-Medicare plans, please see CP.MP.246 Pediatric Kidney Transplant.*

## Policy/Criteria

- I. It is the policy of Medicare health plans affiliated with Centene Corporation<sup>®</sup> 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<sup>2</sup>.<sup>5</sup>
    2. Chronic kidney disease (CKD) (stage 4) with GFR < 30 mL/min/1.73m<sup>2</sup> in member/enrollees who are expected to reach ESRD<sup>1,5</sup>:

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

- B. Does not have any of the following contraindications:
1. Active infection that is not properly treated, except for hepatitis C virus infection<sup>5,6</sup>;
  2. HIV infection with detectable viral load, unless all of the following are documented<sup>5</sup>:
    - a. CD4 cell count > 200 cells/mm<sup>3</sup>;
    - b. Absence of active AIDS-defining opportunistic infection;
    - c. Member/enrollee is currently on effective ART (antiretroviral therapy);
  3. Active malignancy with high risk of recurrence or death related to cancer<sup>5</sup>;
  4. Stroke within the past 6 months or transient ischemic attack within the past 3 months. (If member/enrollee has had a myocardial infarction, clearance from a cardiologist is required prior to kidney transplant)<sup>5</sup>;
  5. Active symptomatic cardiac disease (e.g., angina, arrhythmia, heart failure, valvular heart disease) that has not been evaluated by a cardiologist<sup>5</sup>;
  6. Active symptomatic peripheral arterial disease not properly managed<sup>5</sup>;
  7. Inability to adhere to the regimen necessary to preserve the transplant, even with caregiver support<sup>5</sup>;
  8. Active or ongoing substance use disorder that affects decision-making or puts the member/enrollee at a high level of post-transplant risk<sup>5</sup>;
  9. Acute pancreatitis within the last 3 months<sup>5</sup>;
  10. Decompensated cirrhosis unless candidate for combined liver-kidney transplant<sup>5</sup>;
  11. Elevated levels of circulating antiglomerular basement membrane antibodies.<sup>5</sup>

### **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.<sup>1,2,3,4</sup> 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.<sup>3</sup> Kidney transplantation can prevent and improve growth failure, particularly in young children under six years of age.<sup>2,3</sup>

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.<sup>2</sup>

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.<sup>5</sup> 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.<sup>2</sup> Additional underlying etiologies for pediatric kidney

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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.<sup>2,4</sup>

**Coding Implications**

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CPT® Codes	Description
50300	Donor nephrectomy (including cold preservation); from cadaver donor, unilateral or bilateral
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
50360	Renal allotransplantation, implantation of graft; without recipient nephrectomy
50365	Renal allotransplantation, implantation of graft; with recipient nephrectomy
50547	Laparoscopy, surgical; donor nephrectomy (including cold preservation), from living donor

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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 developed.	08/23	08/23
Annual review. Updated contraindication I.B.2., adding a.-c. References reviewed and updated. Reviewed by external specialist.	04/24	04/24

**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 March 4, 2024.
2. McDonald, RA. Kidney transplantation in children: General principles. UpToDate. [www.uptodate.com](http://www.uptodate.com). Published December 14, 2023. Accessed March 5, 2024.
3. Tönshoff, B. Growth failure in children with chronic kidney disease: Prevention and management. UpToDate. [www.uptodate.com](http://www.uptodate.com). Published August 31, 2022. Accessed March 5, 2024.
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. doi:10.1016/j.kint.2022.07.013

**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. The Health Plan 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. “Health Plan” means a health

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plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care and are solely responsible for the medical advice and treatment of members/enrollees. This clinical policy is not intended to recommend treatment for members/enrollees. Members/enrollees should consult with their treating physician in connection with diagnosis and treatment decisions.

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**Note: For Medicaid members/enrollees**, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

**Note: For Medicare members/enrollees**, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria

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set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

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