

# Clinical Policy: Pancreas Transplantation

Reference Number: LA.CP.MP.102

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[Revision Log](#)  
[Coding Implications](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

## Description

This policy describes the medical necessity requirements for pancreas transplantation procedures. Multiple types of pancreas transplants are effective therapeutic options for arresting the progression of complications of diabetes mellitus, and improving the quality of life for diabetic patients, including: simultaneous pancreas kidney transplant (SPK), pancreas after kidney transplant (PAK), pancreas transplant alone (PTA), and islet cell transplant.<sup>1</sup> ~~The SPK procedure is the most commonly performed transplant procedure, and has the highest post-operative graft survival rates.<sup>1</sup>~~

*Note: For criteria related to Lantidra, please see LA.CP.MP.250 Lantidra (donislecel): Allogeneic Pancreatic Islet Cellular Therapy*

## Policy/Criteria

- I. It is the policy of Louisiana Healthcare Connections that pancreas transplantation is **medically necessary** when meeting all of the following:
  - A. Member/enrollee has one of the following:
    - ~~A.1.~~ A.1. Diagnosis of diabetes mellitus requiring insulin (members/enrollees with requirements for insulin over one unit/kg should be closely evaluated as they may be less likely to benefit from pancreas transplant compared to those with lower insulin doses);
    - ~~B.2.~~ B.2. Diagnosis of exocrine pancreatic insufficiency;
    - ~~C.3.~~ C.3. A requirement for the procurement or transplantation of a pancreas as part of a multiple organ transplant for technical reasons;
  - B. Does not have ANY of the following contraindications:<sup>-2,8</sup>
    - 1. Malignancy with high risk of recurrence or death related to cancer;
    - 2. Glomerular filtration rate < 40 mL/min/1.73m<sup>2</sup> unless being considered for multi-organ transplant;
    - 3. Stroke, acute coronary syndrome, or myocardial infarction (excluding demand ischemia) within 30 days;
    - 4. Acute liver failure, or cirrhosis with portal hypertension or synthetic dysfunction unless being considered for multi-organ transplant;
    - 5. Septic shock;
    - 6. Active infection with highly virulent and/or resistant microbes that are poorly controlled pre-transplant;
    - 7. Active tuberculosis infection;
    - 8. HIV infection with detectable viral load;
    - 9. Progressive cognitive impairment;
    - 10. Inability to adhere to the regimen necessary to preserve the transplant, even with caregiver support;

11. Active substance use or dependence including current tobacco use, vaping, marijuana use (unless prescribed by a licensed practitioner→), or IV drug use without convincing evidence of risk reduction behaviors; (unless urgent transplant timelines are present, in which case a commitment to reducing behaviors is acceptable). Serial blood and urine testing may be used to verify abstinence from substances that are of concern;
  12. Chronic, non-healing wounds;
  13. Significant comorbidities, such as advanced cardiopulmonary, cardiovascular, cerebrovascular, or peripheral vascular disease;
  14. Other severe uncontrolled medical condition expected to limit survival after transplant;
- C.** Request is for one of the following procedures and meets the corresponding criteria:
1. Pancreas Transplant Alone (PTA), meets all:
    - a. Recurrent, severe, and potentially life-threatening metabolic complications that require medical attention, as documented by chart notes, emergency room visits, or hospitalizations, including any of the following:
      - i. Severe hypoglycemia unawareness;
      - ii. Marked hyperglycemia;
      - iii. Recurring severe ketoacidosis;
    - b. Clinical ~~or~~ clinical and emotional problems with exogenous insulin therapy that are so severe as to be incapacitating or consistent failure of insulin~~—~~-based management to prevent acute complications;
    - c. Has been medically managed by an endocrinologist for at least 12 months;
  2. Simultaneous Pancreas Kidney Transplant (SPK), meets all:
    - a. Meets above criteria for PTA;
    - b. End-stage renal disease (ESRD), as defined by both:
      - i. Presence of uremia;
      - ii. Requires dialysis or is expected to require dialysis in the next 12 months;
    - c. Glomerular filtration rate (GFR)  $\leq 20\text{mL/min}$  (does not have to be the most recent value) *or* creatinine clearance (CrCl)  $< 20\text{mL/min}$ ;
  3. Pancreas After Kidney Transplant (PAK), meets all:
    - a. Meets above criteria for PTA;
    - b. Underwent successful kidney transplant without significant chronic rejection of kidney transplant;
    - c. Stable kidney transplant function, as defined by both:
      - i. Stable creatinine clearance  $\geq 30\text{ mL/min}$ ;
      - ii. Absence of significant proteinuria.
- II.** It is the policy of Louisiana Healthcare Connections that autologous islet cell transplants are considered **medically necessary** as an adjunct procedure to a total or near total pancreatectomy for severe, refractory pancreatitis.
- III.** It is the policy of Louisiana Healthcare Connections that pancreas re-transplantations are considered **medically necessary** after one failed primary pancreas transplant.
- IV.** It is the policy of Louisiana Healthcare Connections that current evidence does not support the use of pancreas transplant procedures for any of the following indications:
- A.** Re-transplantations after two or more failed primary pancreas transplantations;
  - B.** Allogeneic islet cell transplantation or xenotransplantation;

- C. SPK transplantation for patients with amputation due to peripheral obstructive vascular disease;
- D. For the treatment of all other conditions than those specified above.

### **Background**

The American Diabetes Association defines diabetes mellitus as a group of metabolic diseases characterized by hyperglycemia that results from defects in insulin secretion, insulin action, or both.<sup>3</sup> According to the Centers for Disease Control and Prevention estimations, approximately 37.3 million people or 11.3% of the United States population has diabetes with approximately 8.5 million undiagnosed cases.<sup>4</sup> Chronic hyperglycemia existing in diabetic patients facilitates long term organ damage, especially to the eyes, kidneys, nerves, and blood vessels.<sup>3</sup>

The prevalent type 2 diabetes is caused by a resistance to insulin action and an inadequate compensatory insulin secretory response.<sup>3</sup> Type 1 diabetes is caused by immune mediated destruction of the insulin secreting pancreatic  $\beta$  cells.<sup>5</sup> Islet cell autoantibodies, insulin autoantibodies, autoantibodies to glutamic acid decarboxylase, zinc transporter 8 (ZnT8A), and autoantibodies to the tyrosine phosphatase IA-2 and IA-2 $\beta$  are serological markers of the pancreatic  $\beta$  cell destruction observed in type 1 diabetes.<sup>3,5,6</sup>

Pancreas transplantation allows for the possibility to restore glucose regulated endogenous secretion, decrease the progression of diabetic complications, and improve quality of life in patients with diabetes.<sup>1,7</sup> Pancreas transplantation is the only proven method to restore normoglycemia in type 1 diabetic patients.<sup>8</sup> Simultaneous pancreas kidney transplant (SPK), pancreas after kidney transplant (PAK), and pancreas transplant alone (PTA) are primarily performed on patients with type 1 diabetes.<sup>8</sup> SPK is an established procedure for diabetic patients with advanced chronic kidney disease or end stage kidney disease and accounts for approximately 90% of pancreas transplants performed in the United States.<sup>9</sup>

A 2011 study by Gruessner<sup>10</sup> reviewed the outcomes of SPK, PAK, and PTA transplantations according to follow-up data collected by the International Pancreas Transplant Registry.

Patient survival rates were reported to be over 95% after one year and over 83% at five years post-transplant. The highest graft survival rates were observed in SPK transplants at 86% for pancreas and 93% for kidney graft function one year post-transplant. PAK procedures displayed graft function at 80%, while PTA had graft function at 78% one year after transplantation.<sup>10</sup> Graft survival rate is defined as total freedom from insulin therapy, normal fasting blood glucose concentrations, and normal or only slightly elevated hemoglobin A1C values.<sup>11</sup> The study demonstrated that pancreas transplantation offers excellent outcomes for patients with labile diabetes due to the improvement in patient survival and graft function shown in all three categories over the course of 24 years.<sup>10</sup>

Patients undergoing pancreas transplantation, especially SPK transplant, require extensive immunosuppression regimens.<sup>1</sup> It is theorized that pancreas transplant recipients require higher levels of immunosuppression therapy than other solid organ transplants due to the immunogenicity of the pancreas or the autoimmune status of the recipient.<sup>12</sup>

During pancreatic islet autotransplantation, Islet  $\beta$  cells are transferred into the liver through the portal vein of the recipient.<sup>1</sup> Pancreatic islet autotransplantation is performed following a

pancreatectomy in patients with severe chronic pancreatitis. Chronic pancreatitis is a debilitating disease which causes diarrhea, weight loss, poor quality of life, and severe abdominal pain that is difficult to alleviate with pharmacological treatment or other therapeutic measures.<sup>1,13</sup> Due to the excessive pain observed in patients with chronic pancreatitis, pain control is a primary goal of pancreatectomy and pancreatic islet autotransplantation.<sup>13</sup>

### **Coding Implications**

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2020, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage and may not support medical necessity. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

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 that support coverage criteria**

<b>CPT®* Codes</b>	<b>Description</b>
48160	Pancreatectomy, total or subtotal, with autologous transplantation of pancreas of pancreatic islet cells
48550	Donor pancreatectomy (including cold preservation), with or without duodenal segment for transplantation
*48551*	Backbench standard preparation of cadaver donor pancreas allograft prior to transplantation, including dissection of allograft from surrounding soft tissues, splenectomy, duodenotomy, ligation of bile duct, ligation of mesenteric vessels, and Y-graft arterial anastomoses from iliac artery to superior mesenteric artery and to splenic artery
48552	Backbench reconstruction of cadaver donor pancreas allograft prior to transplantation, venous anastomosis, each
48554	Transplantation of pancreatic allograft
48556	Removal of transplanted pancreatic allograft
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

CPT® Codes	Description
	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
<del>50328</del>	<del>Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; arterial anastomosis, each</del>
<del>50329</del>	<del>Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; ureteral anastomosis, each</del>
50340	Recipient nephrectomy (separate procedure)
50360	Renal allotransplantation, implantation of graft; without recipient nephrectomy
50365	Renal allotransplantation, implantation of graft; with recipient nephrectomy

~~\* All non covered codes are reviewed for medical necessity for members under 21 years old~~

**CPT Codes that do not support coverage criteria**

CPT® Codes	Description
<del>*0584T*</del>	Islet cell transplant, includes portal vein catheterization and infusion, including all imaging, including guidance, and radiological supervision and interpretation, when performed; percutaneous
<del>*0585T*</del>	Islet cell transplant, includes portal vein catheterization and infusion, including all imaging, including guidance, and radiological supervision and interpretation, when performed; laparoscopic
<del>*0586T*</del>	Islet cell transplant, includes portal vein catheterization and infusion, including all imaging, including guidance, and radiological supervision and interpretation, when performed; open

~~\* All non covered codes are reviewed for medical necessity for members under 21 years old~~

<del>HCPCS Codes</del>	<del>Description</del>
<del>S2065*</del>	<del>Simultaneous pancreas kidney transplantation</del>

Reviews, Revisions, and Approvals	Revision Date	Approval Date
Converted corporate to local policy.	3/21	
Removed contraindication of “severely limited functional status with poor rehabilitation potential.” Replaced “Psychiatric or psychological condition associated with the inability to cooperate or comply with medical therapy” and the contraindication regarding non-compliance with medical therapy with “Inability to adhere to the regimen necessary to preserve the transplant, even with caregiver support.” Changed “Review Date” in header to “Date of Last Revision,” and “Date” in the revision log header to “Revision Date.” Added	2/22	2/22

Reviews, Revisions, and Approvals	Revision Date	Approval Date
“and may not support medical necessity” to coding implications.		
Annual review. References reviewed and updated. Updated description and background with no clinical significance. Updated all contraindications in criteria I.C. “Experimental/investigational” verbiage replaced in criteria IV. statement with descriptive language. Specialist reviewed. Added “and may not support medical necessity” to coding implications.	5/22	8/13/22
Annual review. Removed criterion I.A. stating that medical treatment does not exist or has failed. Removed C-peptide values and BMI requirements from Criteria I.B.1 and I.B.2. Noted in I.B.1. that member/enrollees with requirements for insulin over one unit/kg should be closely evaluated as they may be less likely to benefit from pancreas transplant compared to those with lower insulin doses Added indication in I.B.2 for exocrine pancreatic insufficiency. Added indication I.B.3. for requirement for the procurement or transplantation of a pancreas as part of a multiple organ transplant for technical reasons; Changed “chronic” to “active” in infection contraindication in I.C.7. Removed acute renal failure contraindication. Criteria I.C.12. updated to exclude marijuana use when prescribed by a licensed practitioner and include required commitment to reducing substance use behaviors if urgent transplant timelines are present. Added chronic, non-healing wounds as contraindication in Criteria I.C.13. Added contraindication of significant comorbidities in Criteria I.C.14. Clarified in I.C.1.b that problems with insulin could be clinical or clinical and emotional. Added in I.C.2.c. that the GFR does not have to be the most recent value. Added Criteria I.D.1.c. requirement for being medically managed by an endocrinologist for at least 12 months for pancreas transplant alone. Added requirements for SPK and PAK that PTA criteria also needs to be met for those procedures. ICD-10 codes removed. Added CPT codes 50328 and 50329. Background updated with no impact on criteria. References reviewed and updated.	4/23	7/21/23
<u>Added note to policy to see CP.MP.250 Lantidra (donislecel): Allogeneic Pancreatic Islet Cellular Therapy for criteria related to Lantidra. Note for non-covered codes added.</u>	<u>09/23</u>	



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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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