MEDICAL POLICY – 7.03.02
Allogeneic Pancreas Transplant

BCBSA Ref. Policy: 7.03.02, 7.03.14
Effective Date: Nov. 1, 2019
Last Revised: Oct. 4, 2019
Replaces: Extracted from 7.03.509

RELATED MEDICAL POLICIES:
7.03.01 Kidney Transplant
7.03.12 Islet Transplantation

Select a hyperlink below to be directed to that section.

POLICY CRITERIA | DOCUMENTATION REQUIREMENTS | CODING
RELATED INFORMATION | EVIDENCE REVIEW | REFERENCES | HISTORY

∞ Clicking this icon returns you to the hyperlinks menu above.

Introduction

An organ transplant is the surgical process of replacing a severely diseased organ with a healthy one from a donor. The donated organ can come from a living person or a person who passed away from an accident or illness. Organ failure is the most common reason a transplant is needed. Organ failure can occur because of illness, injury, or birth defect. There are many factors that go into finding a donor organ that matches. These include blood type and the size of the organ. Other factors include how long a person has been on the waiting list, the level of illness, and the distance the donated organ must be transported. This policy describes when transplanting a pancreas may be considered medically necessary. This policy notes that a plan physician will review solid organ transplant requests together with the criteria of the transplant center.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.

Policy Coverage Criteria
<table>
<thead>
<tr>
<th>Transplant</th>
<th>Medical Necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreas transplant after a prior kidney transplant</td>
<td>Pancreas transplant after a prior kidney transplant may be considered medically necessary in patients with insulin-dependent diabetes.</td>
</tr>
<tr>
<td>A combined pancreas and kidney transplant</td>
<td>A combined pancreas and kidney transplant may be considered medically necessary in insulin-dependent diabetic patients with uremia.</td>
</tr>
<tr>
<td>Pancreas transplant, alone</td>
<td>Pancreas transplant alone may be considered medically necessary in patients with severely disabling and potentially life-threatening complications due to hypoglycemia unawareness and labile insulin-dependent diabetes that persists despite optimal medical management.</td>
</tr>
<tr>
<td>Pancreas retransplant</td>
<td>Pancreas retransplant after a failed primary pancreas transplant may be considered medically necessary in patients who meet criteria for pancreas transplantation.</td>
</tr>
</tbody>
</table>

**Note:** See Related Information

<table>
<thead>
<tr>
<th>Drug</th>
<th>Investigational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreas transplant</td>
<td>Pancreas transplant is considered investigational in all other situations not outlined above.</td>
</tr>
<tr>
<td>HCV-viremic (Hepatits-C) solid organs</td>
<td>The transplantation of HCV-viremic solid organs (kidney, lung, heart, liver, small bowel, pancreas) to an HCV non-viremic recipient combined with direct-acting antiviral treatment for HCV is considered investigational.</td>
</tr>
</tbody>
</table>

**Documentation Requirements**

The patient’s medical records submitted for review for all conditions should document that medical necessity criteria are met. The record should include the following:

- Office visit notes that contain the relevant history and physical supporting that patient has insulin dependent diabetes (specify if Type 1 or Type 2) and if applicable the hospitalizations that occurred due to complications of hypoglycemic unawareness and/or diabetic ketoacidosis with the medication management trialed and failed, along with the specific type of pancreatic transplant being requested
### Coding

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPT</strong></td>
<td></td>
</tr>
<tr>
<td>48554</td>
<td>Transplantation of pancreatic allograft</td>
</tr>
<tr>
<td><strong>HCPCS</strong></td>
<td></td>
</tr>
<tr>
<td>S2065</td>
<td>Simultaneous pancreas kidney transplantation</td>
</tr>
<tr>
<td>S2152</td>
<td>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</td>
</tr>
</tbody>
</table>

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### Related Information

**Pancreas-Specific Criteria**

Candidates for pancreas transplant alone should also meet one of the following severity of illness criteria:

- Documented severe hypoglycemia unawareness as evidenced by chart notes or emergency department visits or

- Documented potentially life-threatening labile diabetes, as evidenced by chart notes or hospitalization for diabetic ketoacidosis.

Additionally, most pancreas transplant patients will have type 1 diabetes. Those transplant candidates with type 2 diabetes, in addition to being insulin-dependent, should also not be obese (body mass index should be \( \leq 32 \text{ kg/m}^2 \)). According to International Pancreas Transplant Registry data, in 2010, 7% of pancreas transplant recipients had type 2 diabetes (Gruessner [2011]).
Multiple Transplant Criteria

Although there are no standard guidelines for multiple pancreas transplants, the following information may aid in case review:

- If there is early graft loss resulting from technical factors (eg, venous thrombosis), a retransplant may generally be performed without substantial additional risk.

- Long-term graft losses may result from chronic rejection, which is associated with increased risk of infection following long-term immunosuppression, and sensitization, which increases the difficulty of finding a negative cross-match. Some transplant centers may wait to allow reconstitution of the immune system before initiating retransplant with an augmented immunosuppression protocol.

Contraindications

Potential contraindications for solid organ transplant are subject to the judgment of the transplant center include the following:

- Known current malignancy, including metastatic cancer
- Recent malignancy with high-risk of recurrence
- Untreated systemic infection making immunosuppression unsafe, including chronic infection
- Other irreversible end-stage diseases not attributed to kidney disease
- History of cancer with a moderate risk of recurrence
- Systemic disease that could be exacerbated by immunosuppression
- Psychosocial conditions or chemical dependency affecting the ability to adhere to therapy.

Benefit Application

See member’s plan contract language for organ transplant benefits and specific benefits related to transport, lodging, and donor services. Please note limitations in coverage based on the transplant benefit, if applicable.
Description

Transplantation of a healthy pancreas is a treatment for patients with insulin-dependent diabetes. Pancreas transplantation can restore glucose control and prevent, halt, or reverse the secondary complications from diabetes.

Background

Pancreas transplantation occurs in several different scenarios such as (1) a diabetic patient with renal failure who may receive a simultaneous cadaveric pancreas plus kidney transplants; (2) a diabetic patient who may receive a cadaveric or living-related pancreas transplant after a kidney transplantation (pancreas after kidney); or (3) a nonuremic diabetic patient with specific severely disabling and potentially life-threatening diabetic problems who may receive a pancreas transplant alone. The total number of adult pancreas transplants (pancreas and pancreas plus kidney) in the U. S. peaked at 1484 in 2004 and has since steadily declined. In 2017, 213 received a pancreas transplant alone and 789 simultaneous pancreas plus kidneys were performed in the U. S.

According to the International Pancreas Transplant Registry data, the proportion of pancreas transplant recipients worldwide who have type 2 diabetes has increased over time, from 2% in 1995 to 7% in 2010. In 2010, approximately 8% of simultaneous pancreas plus kidney transplants, 5% of pancreas transplant after kidney transplant, and 1% of a pancreas transplant alone were performed in patients with type 2 diabetes.

Summary of Evidence

For individuals who have insulin-dependent diabetes who receive a pancreas after kidney (PAK) transplant, the evidence includes case series and registry studies. The relevant outcomes are overall survival, change in disease status, and treatment-related mortality and morbidity. Data from national and international registries have found relatively high patient survival rates with a PAK transplant (eg, a 3-year survival rate of 93%). A 2012 analysis of data from a single-center found similar patient survival and death-censored pancreas graft survival rates with a PAK
transplant or a simultaneous pancreas and kidney (SPK) transplant. The evidence is sufficient to
determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have insulin-dependent diabetes with uremia who receive SPK transplants,
the evidence includes registry studies. The relevant outcomes are overall survival, change in
disease status, and treatment-related mortality and morbidity. Data from national and
international registries have found relatively high patient survival rates after SPK transplant. A
retrospective analysis found a higher survival rate in patients with type 1 diabetes who had an
SPK transplant vs those on a waiting list. The evidence is sufficient to determine that the
technology results in a meaningful improvement in the net health outcome.

For individuals who have insulin-dependent diabetes and severe complications who receive
pancreas transplant alone (PTA), the evidence includes registry studies. The relevant outcomes
are overall survival, change in disease status, and treatment-related mortality and morbidity.
Data from international and national registries have found that graft and patient survival rates
after PTA have improved over time (eg, 3-year survival of 95%). The evidence is sufficient to
determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have had a prior pancreas transplant who still meet criteria for a pancreas
transplant who receive pancreas retransplantation, the evidence includes case series and registry
studies. The relevant outcomes are overall survival, change in disease status, and treatment-
related mortality and morbidity. National data and specific transplant center data have generally
found similar graft and patient survival rates after pancreas retransplantation compared with
initial transplantation. The evidence is sufficient to determine that the technology results in a
meaningful improvement in the net health outcome.

For individuals who are HCV non-viremic who have end-stage organ disease and are candidates
for a solid organ transplant such as for small bowel or pancreas, evidence for the use of HCV
viremic donor organs as an alternative to continuing appropriate medical treatment and
remaining on the transplant wait-list has not been reported in the last five years in the published
literature. The evidence is insufficient to determine the effects of the technology on health
outcomes.

**Ongoing and Unpublished Clinical Trials**

Some currently ongoing and unpublished trials that might influence this review are listed in
Table 1.
Table 1. Summary of Key Trials

<table>
<thead>
<tr>
<th>NCT No.</th>
<th>Trial Name</th>
<th>Planned Enrollment</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ongoing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCT01047865</td>
<td>Type 1 Diabetes Recurrence in Pancreas Transplants</td>
<td>400</td>
<td>May 2020</td>
</tr>
<tr>
<td>NCT01957696</td>
<td>A Prospective, Observational Study in Pancreatic Allograft Recipients: The Effect of Risk Factors, Immunosuppressive Level and the Benefits of Scheduled Biopsies - on Surgical Complications, Rejections, and Graft Survival</td>
<td>80</td>
<td>Oct 2028</td>
</tr>
<tr>
<td><strong>Unpublished</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCT00238693</td>
<td>Transplant Registry: Patients Who May Require Transplantation and Those Who Have Undergone Transplantation of Liver, Kidney and/or Pancreas</td>
<td>13,767</td>
<td>Jan 2018</td>
</tr>
</tbody>
</table>

NCT: national clinical trial.

Practice Guidelines and Position Statements

**Organ Procurement and Transplantation Network**

The Organ Procurement and Transplantation Network updated its comprehensive list of transplant-related policies, most recently in May 2019.23

For pancreas registration:

"Each candidate registered on the pancreas waiting list must meet one of the following requirements:

- Be diagnosed with diabetes
- Have pancreatic exocrine insufficiency
- Require the procurement or transplantation of a pancreas as part of a multiple organ transplant for technical reasons."

For combined kidney plus pancreas registration: "Each candidate registered on the kidney-pancreas waiting list must be diagnosed with diabetes or have pancreatic exocrine insufficiency with renal insufficiency."
**The American Society of Transplantation**

The American Society of Transplantation (2017) convened a consensus conference of experts to address issues related to the transplantation of hepatitis C virus (HCV) viremic solid organs into HCV non-viremic recipients and concluded that the transplantation of organs from HCV viremic donors into HCV-negative recipients should be conducted only under monitored IRB-approved protocols and studies.

**Medicare National Coverage**

An allogeneic pancreas transplant is covered under Medicare when performed in a facility approved by Medicare as meeting institutional coverage criteria. The Centers for Medicare & Medicaid Services made the following national coverage decision on pancreas transplant for Medicare recipients.

"A. General

Pancreas transplantation is performed to induce an insulin-independent, euglycemic state in diabetic patients. The procedure is generally limited to those patients with severe secondary complications of diabetes, including kidney failure. However, pancreas transplantation is sometimes performed on patients with labile diabetes and hypoglycemic unawareness.

B. Nationally Covered Indications

Effective ... 1999, whole organ pancreas transplantation is nationally covered by Medicare when performed simultaneously with or after a kidney transplant. If the pancreas transplant occurs after the kidney transplant, immunosuppressive therapy begins with the date of discharge from the inpatient stay for the pancreas transplant.

Effective ... 2006, pancreas transplants alone (PA) are reasonable and necessary for Medicare beneficiaries in the following limited circumstances:

1. PA will be limited to those facilities that are Medicare-approved for kidney transplantation.
   - Patients must have a diagnosis of type I diabetes:
   - Patient with diabetes must be beta-cell autoantibody-positive; or
2. Patient must demonstrate insulinopenia defined as a fasting C-peptide level that is less than or equal to 110% of the lower limit of normal of the laboratory’s measurement method. Fasting C-peptide levels will only be considered valid with a concurrently obtained fasting glucose ≤225 mg/dL;

3. Patients must have a history of medically-uncontrollable labile (brittle) insulin-dependent diabetes mellitus with documented recurrent, severe, acutely life-threatening metabolic complications that require hospitalization. Aforementioned complications include frequent hypoglycemia unawareness or recurring severe ketoacidosis, or recurring severe hypoglycemic attacks;

4. Patients must have been optimally and intensively managed by an endocrinologist for at least 12 months with the most medically recognized advanced insulin formulations and delivery systems;

5. Patients must have the emotional and mental capacity to understand the significant risks associated with surgery and to effectively manage the lifelong need for immunosuppression; and,

6. Patients must otherwise be a suitable candidate for transplantation."

Nationally noncovered indications include "Transplantation of partial pancreatic tissue or islet cells (except in the context of a clinical trial)."

**Regulatory Status**

Small bowel/liver and multivisceral transplantation are surgical procedures and, as such, are not subject to regulation by the U.S. Food and Drug Administration.

The U.S. Food and Drug Administration regulates human cells and tissues intended for implantation, transplantation, or infusion through the Center for Biologics Evaluation and Research, under Code of Federal Regulation Title 21, parts 1270 and 1271. Pancreas transplants are included in these regulations.

**References**


History

<table>
<thead>
<tr>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/01/19</td>
<td>New policy, approved October 4, 2019. Content previously addressed in policy 7.03.509. Policy created with literature review through June 2019. Pancreas transplantation may be considered medically necessary when criteria are met, considered investigational when criteria are not met. Policy statement on transplantation of HCV viremic organs is taken from BCBSA policy 7.03.14.</td>
</tr>
</tbody>
</table>

Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. The Company adopts policies after careful review of published peer-reviewed scientific literature, national guidelines and local standards of practice. Since medical technology is constantly changing, the Company reserves the right to review and update policies as appropriate. Member contracts differ in their benefits. Always consult the member benefit booklet or contact a member service representative to determine coverage for a specific medical service or supply. CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). ©2019 Premera All Rights Reserved.

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- Qualified sign language interpreters
- Written information in other formats (large print, audio, accessible electronic formats, other formats)
- Provides free language services to people whose primary language is not English, such as:
- Qualified interpreters
- Information written in other languages

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PO Box 91102, Seattle, WA 98111
Toll free 855-332-4535, Fax 425-918-5592, TTY 800-842-5357
Email AppealsDepartmentInquiries@Premera.com

You can file a grievance in person or by mail, fax, or email. If you need help filing a grievance, the Civil Rights Coordinator is available to help you.


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French (French):

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Avi sila a gen Enfomyson Enpòt an ladan. Avi sila a kapab geny enn enfomason enpòtan konsènan aplikasyon w lan oswa konèsan kouvèti asirans lan atavrè Premera Blue Cross. Kapab genyenn dat ki enpòtan nan avi sila a. Ou ka gen pou pran kék aksyon avan sèten dat limit pou ka kentbe kouvèti asirans sante w la oswa pou yo ka ede w avèk depans yo. Se dwa w pou resewwa enfomason sa a ak asisants nan lang ou pale a, san ou pa gen pou peye pou sa. Rate nan 800-722-1471 (TTY: 800-842-5357).

Deutsche (German):

Hmoo (Hmong):
Tsab ntawv tshaj xo no muaj cov ntshiab lus tseem ceeb. Tej zaum tsab ntawv tshaj xo no muaj cov ntshiab lus tseem ceeb bxoj kaj daim ntawv thov kev pab los yoj koy chov kev pab cuam los ntawm Premera Blue Cross. Tej zaum muaj cov hnb tseem ceeb cuam rau hauv daim ntawm no. Tej zaum yoy kaj yuvu tau ua yee yam uab pe kom kaj ua tsip pub dhatu cov caj nyoy uas teev tseg rau hauv daim ntawv no mas kaj thaj yuvu tau baas kev pab cuam kho mob los yoj kev pab tekm nei xoo kho mob ntwaw. Kaj muaj cai kom laww muab cov ntshiab lus no uas tau muab sau ua kaj hom lus pub dawr kaj. Hu rau 800-722-1471 (TTY: 800-842-5357).

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Daytoy a Pakdaar ket naglaon iti Napateg nga Impormasion. Daytoy a pakdaar mabalin nga adda ket naglaon iti napateg nga impormasion maipanggep iti aplikasyon no wayno coverage babaen iti Premera Blue Cross. Daytoy ket mabalin dagiti importante a pelta iti daytoy a pakdaar. Mabalin nga adda rumbeng nga aramidemo nga adda saksay dagiti partikular a naituding nga adlaw tapon mapattalaindo nga coveraje ti salun-ayno nga tulong kadagiti gastos. Adda karbenganyo a mangala iti daytoy nga impormasion ken tulong iti bukodyo a pagasao nga awan ti bayadanyo. Tumawag ti numero nga 800-722-1471 (TTY: 800-842-5357).

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