Clinical Policy: Intestinal and Multivisceral Transplant
Reference Number: CP.MP.58
Date of Last Revision: 02/22

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

Description
This policy describes the medical necessity criteria for the review of intestinal and multivisceral transplant requests.

Policy/Criteria
It is the policy of health plans affiliated with Centene Corporation® that any of the intestinal and/or multivisceral transplantation procedures listed in I are medically necessary for pediatric and adult members/enrollees to restore function in those with irreversible intestinal failure when meeting the criteria in section II:

I. Transplantation Procedures
   A. Isolated intestinal transplantation is indicated for members/enrollees who have only isolated intestinal failure and no liver disease.
   B. Combined intestinal and liver transplant is indicated in those with intestinal failure and end stage liver disease.
   C. Multivisceral transplant is indicated in those with intestinal failure and gastrointestinal motility disorders (e.g., chronic idiopathic intestinal pseudo-obstruction, visceral myopathy, visceral neuropathy, total intestinal aganglionosis, and some forms of mitochondrial respiratory chain disorders that affect gastrointestinal motor function), or extensive mesenteric thrombosis.

II. Procedure Criteria: Members/enrollees must have one of the indications in A and none of the contraindications in B:
   A. Indications, any one of the following:
      1. Failure of total parenteral nutrition (TPN) as indicated by one of the following:
         a. Impending or overt liver failure due to TPN, indicated by elevated serum bilirubin and/or liver enzymes, splenomegaly, thrombocytopenia, gastro-esophageal varices, coagulopathy, peristomal bleeding, or hepatic fibrosis/cirrhosis;
         b. Thrombosis of ≥ 2 central veins, including jugular, subclavian, and femoral veins;
         c. Two or more episodes of systemic sepsis due to line infection, per year, or one episode of septic shock, acute respiratory distress syndrome, and/or line related fungemia;
         d. Frequent episodes of dehydration despite IV fluid supplementation;
         e. Other complications leading to loss of vascular access;
      2. High risk of death if transplant is not performed;
      3. Severe short bowel syndrome (gastrostomy, duodenostomy, and/or residual small bowel <10 cm in infants and <20 cm in adults);
      4. Frequent hospitalizations for complications directly related to intestinal failure;
      5. Significant hepatic cirrhosis associated with diffuse post-mesenteric thrombosis;
   B. Does not have ANY of the following contraindications:
CLINICAL POLICY
Intestinal and Multivisceral Transplant

1. Malignancy with high risk of recurrence or death related to cancer;
2. Other severe uncontrolled medical condition expected to limit survival after transplant;
3. Glomerular filtration rate < 40 mL/min/1.73m² unless being considered for multi-organ transplant;
4. HIV infection with detectable viral load;
5. Presence of other GI diseases;
6. Acute liver failure, or cirrhosis with portal hypertension or synthetic dysfunction unless being considered for multi-organ transplant;
7. Septic shock;
8. Progressive cognitive impairment;
9. Stroke, acute coronary syndrome, or myocardial infarction (excluding demand ischemia) within 30 days;
10. Chronic infection with highly virulent and/or resistant microbes that are poorly controlled pre-transplant;
11. Inability to adhere to the regimen necessary to preserve the transplant, even with caregiver support;
12. Absence of an adequate or reliable social support system;
13. Active 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 that are of concern.

Background
Intestinal transplantation is a therapeutic option for patients with intestinal failure. Intestinal failure is the loss of absorptive capacity of the small bowel secondary to severe primary gastrointestinal disease or surgically induced short bowel syndrome (SBS). The normal small intestine length varies widely, ranging from 3 to 8 meters. SBS occurs when there is approximately < 200 cm of small bowel remaining.

Multi-visceral transplantation includes the stomach, duodenum, pancreas, liver, and small intestine. A modified version excludes the liver if the recipient’s liver is normal. A kidney transplant is occasionally included if the recipient has end-stage renal disease.

Common indications for intestinal transplantation in children include:
- Small bowel atresia
- Gastrochisis
- Aganglionosis (Hirschsprung’s disease)
- Infections such as necrotizing enterocolitis and mesenteric ischemia
- Intestinal pseudo-obstruction
- Microvillus inclusion disease
- Short gut syndrome
- Trauma
- Crohn’s disease
- Midgut volvulus
- Massive resection secondary to tumor

Common indications for intestinal transplantation in adults include:
- Short gut syndrome
- Mesenteric ischemia following thrombosis, embolism, volvulus, or trauma
CLINICAL POLICY
Intestinal and Multivisceral Transplant

- Crohn’s disease
- Small bowel tumors
- Small bowel secretory disorders
- Tumors of mesenteric root and retroperitoneum
- Trauma
- Volvulus
- Pseudo-obstruction
- Radiation enteritis

Guideline Recommendations
The British Society of Gastroenterology (2006) recommends: patients with SBS, including irreversible intestinal failure, expected to die prematurely on TPN, should be referred for consideration of short bowel transplant where appropriate.

The American Society of Transplantation (AST, 2001) issued a position paper on indications for pediatric intestinal transplantation. The AST recommends intestinal transplantation only for TPN-dependent children with intestinal failure who have or are likely to develop life-threatening TPN-related complications such as liver disease, recurrent sepsis, and threatened loss of central venous access. The AST stated that intestinal transplantation should not be performed solely because of continued dependence on TPN.

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. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

<table>
<thead>
<tr>
<th>CPT® Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>44135</td>
<td>Intestinal allotransplantation; from cadaver donor</td>
</tr>
<tr>
<td>44136</td>
<td>Intestinal allotransplantation; from living donor</td>
</tr>
<tr>
<td>44715</td>
<td>Backbench standard preparation of cadaver or living donor intestine allograft prior to transplantation, including mobilization and fashioning of the superior mesenteric artery and vein</td>
</tr>
<tr>
<td>44720</td>
<td>Backbench reconstruction of cadaver or living donor intestine allograft prior to transplantation; venous anastomosis, each</td>
</tr>
<tr>
<td>44721</td>
<td>Backbench reconstruction of cadaver or living donor intestine allograft prior to transplantation; arterial anastomosis, each</td>
</tr>
<tr>
<td>47135</td>
<td>Liver allotransplantation, orthotopic, partial or whole, from cadaver or living donor, any age</td>
</tr>
<tr>
<td>47143</td>
<td>Backbench standard preparation of cadaver donor whole liver graft prior to allotransplantation, including cholecystectomy, if necessary, and dissection and removal of surrounding soft tissues to prepare the vena cava, portal vein, hepatic artery, and common bile duct for implantation; without trisegment or lobe split</td>
</tr>
</tbody>
</table>
## CLINICAL POLICY
Intestinal and Multivisceral Transplant

<table>
<thead>
<tr>
<th>CPT® Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>47144</td>
<td>Backbench standard preparation of cadaver donor whole liver graft prior to allotransplantation, including cholecystectomy, if necessary, and dissection and removal of surrounding soft tissues to prepare the vena cava, portal vein, hepatic artery, and common bile duct for implantation; with trisegment split of whole liver graft into two partial liver grafts (i.e., left lateral segment (segments II and III) and right trisegment (segments I and IV through VIII))</td>
</tr>
<tr>
<td>47145</td>
<td>Backbench standard preparation of cadaver donor whole liver graft prior to allotransplantation, including cholecystectomy, if necessary, and dissection and removal of surrounding soft tissues to prepare the vena cava, portal vein, hepatic artery, and common bile duct for implantation; with lobe split of whole liver graft into two partial liver grafts (i.e., left lobe (segments II, III, and IV) and right lobe (segments I and V through VIII))</td>
</tr>
<tr>
<td>47146</td>
<td>Backbench reconstruction of cadaver or living donor liver graft prior to allotransplantation; venous anastomosis, each</td>
</tr>
<tr>
<td>47147</td>
<td>Backbench reconstruction of cadaver or living donor liver graft prior to allotransplantation; arterial anastomosis, each</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HCPCS Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2053</td>
<td>Transplantation of small intestine and liver allografts</td>
</tr>
<tr>
<td>S2054</td>
<td>Transplantation of multivisceral organs</td>
</tr>
<tr>
<td>S2055</td>
<td>Harvesting of donor multivisceral organs, with preparation and maintenance of allografts; from cadaver donor</td>
</tr>
<tr>
<td>S2152</td>
<td>Solid organs(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 post-transplant care in the global definition</td>
</tr>
</tbody>
</table>

### ICD-10-CM Diagnosis Codes that Support Coverage Criteria

<table>
<thead>
<tr>
<th>ICD-10-CM Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A41.89</td>
<td>Other specified sepsis</td>
</tr>
<tr>
<td>A41.9</td>
<td>Sepsis, unspecified organism</td>
</tr>
<tr>
<td>K50.00-K52.9</td>
<td>Non-infective colitis and enteritis</td>
</tr>
<tr>
<td>K55.011-K55.9</td>
<td>Vascular disorders of intestine</td>
</tr>
<tr>
<td>K56.0-K56.7</td>
<td>Paralytic ileus and intestinal obstruction without hernia</td>
</tr>
<tr>
<td>K70.0-K77</td>
<td>Diseases of liver</td>
</tr>
<tr>
<td>P76.8</td>
<td>Other specifiedintestinal obstruction of newborn</td>
</tr>
<tr>
<td>P77.1-P77.9</td>
<td>Necrotizing enterocolitis of newborn</td>
</tr>
<tr>
<td>Q41.0-Q41.9</td>
<td>Congenital absence, atresia and stenosis of small intestine</td>
</tr>
<tr>
<td>Q43.1</td>
<td>Hirschsprung's disease</td>
</tr>
</tbody>
</table>
### ICD-10-CM Code
### Description

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R65.20-R65.21</td>
<td>Severe sepsis</td>
</tr>
<tr>
<td>S35.299(A/D/S)</td>
<td>Unspecified injury of branches of celiac and mesenteric artery, initial, subsequent encounter and sequela</td>
</tr>
<tr>
<td>T86.850-T86.859</td>
<td>Complication of intestine transplant</td>
</tr>
<tr>
<td>Z94.82</td>
<td>Intestine transplant status</td>
</tr>
</tbody>
</table>

### Reviews, Revisions, and Approvals

<table>
<thead>
<tr>
<th>Description</th>
<th>Revision Date</th>
<th>Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy developed Specialist review (Surgical Transplant)</td>
<td>02/14</td>
<td>02/14</td>
</tr>
<tr>
<td>References reviewed and updated. Formatting and template updated</td>
<td>02/15</td>
<td>02/15</td>
</tr>
<tr>
<td>Minor language updates for clarification. References reviewed and updated. Formatting and template updated</td>
<td>02/16</td>
<td>02/16</td>
</tr>
<tr>
<td>Consolidated criteria from HN policy. Edited contraindications to be more consistent across transplant policies: Changed substance abuse to substance abuse or dependence, and added option for blood/urine testing if needed; added bleeding diatheses; reworded other contraindications for clarity. Added ICD-10 Codes. Added additional CPT and HCPCS codes.</td>
<td>8/16</td>
<td>09/16</td>
</tr>
<tr>
<td>References reviewed and updated. Some re-wording for clarity.</td>
<td>09/17</td>
<td>09/17</td>
</tr>
<tr>
<td>References reviewed and updated.</td>
<td>06/18</td>
<td>06/18</td>
</tr>
<tr>
<td>References reviewed and updated. Added CPT-47135. Specialist review</td>
<td>06/19</td>
<td>06/19</td>
</tr>
<tr>
<td>Edited malignancy contraindication to not specify within 2 years, and added exceptions early stage prostate cancer, cancer that has been completely resected, or that has been treated and poses acceptable future risk. Clarified in I.C that multivisceral transplants are indicated in gastrointestinal motility disorders, along with examples of such. Added ICD 10 Q43.1 References reviewed and updated.</td>
<td>05/20</td>
<td>05/20</td>
</tr>
<tr>
<td>References reviewed and updated. All instances of “member” changed to “member/enrollee.”</td>
<td>04/21</td>
<td>05/21</td>
</tr>
<tr>
<td>Replaced contraindications of “severely limited functional status with poor rehabilitation potential” and those regarding past or current nonadherence to medical therapy, and psychological condition associated with the inability to comply 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.”</td>
<td>08/21</td>
<td>08/21</td>
</tr>
<tr>
<td>Edited contraindications: Replaced “non-hepatic malignancy…” with malignancy with high risk of recurrence or death…”; added GFR restriction, added HIV infection with detectable viral load, added stroke, acute coronary syndrome, or MI; added acute renal failure…; added</td>
<td>02/22</td>
<td>02/22</td>
</tr>
</tbody>
</table>
Reviews, Revisions, and Approvals

<table>
<thead>
<tr>
<th>Description</th>
<th>Revision Date</th>
<th>Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>septic shock; added progressive cognitive impairment; replaced “untreatable significant dysfunction of another major organ system…” with “Other severe uncontrolled medical condition expected to limit survival after transplant;” slightly reworded substance use contraindication; removed “acute medical instability…”; removed “uncorrectable bleeding diathesis.”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References


**Clinical Policy**

**Intestinal and Multivisceral Transplant**


**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 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.

Providers referred to in this clinical policy are independent contractors who exercise independent
judgment and over whom the Health Plan has no control or right of control. Providers are not
agents or employees of the Health Plan.

This clinical policy is the property of the Health Plan. Unauthorized copying, use, and
distribution of this clinical policy or any information contained herein are strictly prohibited.
Providers, members/enrollees and their representatives are bound to the terms and conditions
expressed herein through the terms of their contracts. Where no such contract exists, providers,
members/enrollees and their representatives agree to be bound by such terms and conditions by
providing services to members/enrollees and/or submitting claims for payment for such services.

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

©2016 Centene Corporation. All rights reserved. All materials are exclusively owned by
Centene Corporation and are protected by United States copyright law and international
copyright law. No part of this publication may be reproduced, copied, modified, distributed,
displayed, stored in a retrieval system, transmitted in any form or by any means, or otherwise
published without the prior written permission of Centene Corporation. You may not alter or
remove any trademark, copyright or other notice contained herein. Centene® and Centene
Corporation® are registered trademarks exclusively owned by Centene Corporation.