Clinical Policy: Intestinal and Multivisceral Transplant

Reference Number: CP.MP.58
Effective Date: 02/14
Last Review Date: 09/16

Coding Implications
Revision Log

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

Description
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 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 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 the presence of neuropathy or extensive mesenteric thrombosis.

II. Procedure Criteria: Members 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 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, stomal 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, 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:
  1. Malignancy in the past two years, except for non-melanoma localized skin cancer that has been treated appropriately;

2. Untreatable significant dysfunction of another major organ system, unless combined organ transplantation can be performed;
3. Presence of other GI diseases;
4. Acute medical instability, including, but not limited to, acute sepsis or myocardial infarction;
5. Uncorrectable bleeding diathesis;
6. Chronic infection with highly virulent and/or resistant microbes that are poorly controlled pre-transplant;
7. Current non-adherence to medical therapy or a history of repeated or prolonged episodes of non-adherence to medical therapy that are perceived to increase the risk of non-adherence after transplantation;
8. Psychiatric or psychological condition associated with the inability to cooperate or comply with medical therapy;
9. Absence of an adequate or reliable social support system;
10. Severely limited functional status with poor rehabilitation potential;
11. Substance abuse or dependence (including tobacco and alcohol) 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 liver is normal. A kidney is occasionally included if the recipient has end-stage renal disease.

Common indications for intestinal transplantation in children include:

- Small bowel atresia
- Gastroschisis
- 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
- Crohn's disease
- Small bowel tumors
- Small bowel secretory disorders
- Tumors of mesenteric root and retroperitoneum
- Trauma
- Volvulus

- Pseudo-obstruction
- Radiation enteritis

Levitsky et al (2013, American Journal of Transplantation) A number of hepatotrophic viruses affect organ transplant candidates and recipients. The most important agents causing acute and chronic hepatitis are hepatitis B virus (HBV), with or without hepatitis delta virus (HDV), and hepatitis C virus (HCV).

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

The American Society of Transplantation (AST, 2001): issued a position paper on indications for pediatric intestinal transplantation in children. 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 2015, 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.

CPT® Codes	Description
44135	Intestinal allotransplantation; from cadaver donor
44136	Intestinal allotransplantation; from living donor
44715	Backbench standard preparation of cadaver or living donor intestine allograft prior to transplantation, including mobilization and fashioning of the superior mesenteric artery and vein
44720	Backbench reconstruction of cadaver or living donor intestine allograft prior to transplantation; venous anastomosis, each
44721	Backbench reconstruction of cadaver or living donor intestine allograft prior to transplantation; arterial anastomosis, each
47143	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

CPT® Codes	Description
47144	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)
47145	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)
47146	Backbench reconstruction of cadaver or living donor liver graft prior to allotransplantation; venous anastomosis, each
47147	Backbench reconstruction of cadaver or living donor liver graft prior to allotransplantation; arterial anastomosis, each

HCPCS Codes	Description
S2053	Transplantation of small intestine and liver allografts
S2054	Transplantation of multivisceral organs
S2055	Harvesting of donor multivisceral organs, with preparation and maintenance of allografts; from cadaver donor
S2152	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

ICD-10-CM Diagnosis Codes that Support Coverage Criteria

ICD-10-CM Code	Description
A41.9	Other sepsis
K50.00-K52.9	Non-infective colitis and enteritis
K55.0-K57.93	Diseases of intestines (Vascular disorders of intestines)
K70.0-K77	Diseases of liver
P76.8	Other specified intestinal obstruction of newborn
P77.1-P77.9	Necrotizing enterocolitis of newborn
Q41.0-Q41.9	Congenital absence, atresia an stenosis of small intestine

ICD-10-CM Code	Description
R65.20-R65.21	Severe sepsis
S35.299-(A/D/S)	Unspecified injury of branches of celiac and mesenteric artery, initial, subsequent encounter and sequela
T86.850-T86.859	Complications of intestine transplant
Z94.82	Intestine transplant status

Reviews, Revisions, and Approvals	Date	Approval Date
Policy developed Specialist review (Surgical Transplant)	02/14	02/14
References reviewed and updated Formatting and template updated	02/15	02/15
Minor language updates for clarification References reviewed and updated Formatting and template updated	02/16	02/16
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.	8/16	09/16

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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. 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.

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Note: For Medicare members, 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.

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