

## Policy

Northern Light Employee Health Plan considers **Small Bowel, Small Bowel/Liver, and Multivisceral Transplants** medically necessary for the following indications:

### Recipient Characteristics

- The member has no medical, cognitive, or other psychiatric condition that is likely to interfere with their ability to manage the sequelae of the transplant, including complex medication regimens.

### General Criteria for Transplantation

- The member meets the institution's selection criteria for small bowel, small bowel/liver, and multivisceral transplants.

### Specific Criteria for Small Bowel Transplant

Indications for small bowel transplant include any of the following:

1. Impending or overt liver failure due to TPN-induced liver injury. Clinical manifestations include any of the following:
  - a) Elevated serum bilirubin and/or liver enzymes
  - b) Splenomegaly
  - c) Thrombocytopenia
  - d) Gastroesophageal varices
  - e) Coagulopathy
  - f) Stomal bleeding or hepatic fibrosis/cirrhosis
2. TPN Failure for any of the following reasons:
  - a) Thrombosis of the major central venous channels; jugular, subclavian, and femoral veins. Thrombosis of two or more of these vessels is considered a life threatening complication and failure of TPN therapy.
  - b) Frequent line infection and sepsis. The development of two or more episodes of systemic sepsis secondary to line infection per year that requires hospitalization indicates failure of TPN therapy. A single episode of line related fungemia, septic shock and/or Acute Respiratory Distress Syndrome are considered indicators of TPN failure.
  - c) Frequent episodes of severe dehydration despite intravenous fluid supplement in addition to TPN under certain medical conditions. Under certain medical conditions such as secretory diarrhea and non-constructable gastrointestinal tract, the loss of the gastrointestinal and pancreaticobiliary secretions exceeds the maximum intravenous infusion rates that can be tolerated by the cardiopulmonary system. Frequent episodes of dehydration

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Last Review Date: 05/11/2017  
Effective Date: 01/01/2018

are deleterious to all body organs particularly kidneys and the central nervous system with the development of multiple kidney stones, renal failure, and permanent brain damage.

**Specific Criteria for Small Bowel/Liver Transplant** - Indications for small bowel/liver transplantation include short bowel syndrome and any of the following:

- A. Irreversible intestinal failure
- B. Evidence of impending end-stage liver failure
- C. Established TPN dependence (two year minimum) and evidence of severe complications from TPN, such as:
  - Liver dysfunction
  - Repeated infections
  - Thrombosis of two or more major central venous channels
  - Difficult venous access for TPN administration
  - Frequent episodes of dehydration

**Specific Criteria for Small Bowel/Multivisceral Transplant (MVT)** - Indications for a small bowel/multivisceral transplantation include:

1. Criteria are met for a small bowel/liver transplant and
2. Anatomic or other medical problems associated with other visceral organs (e.g., liver, duodenum, jejunum, ileum, pancreas, or colon); preclude a small bowel/liver transplant. Such problems might include:
  - Extensive thrombosis of the splanchnic venous system
  - Massive gastrointestinal polyposis
  - Generalized hollow visceral myopathy or neuropathy

**Specific Criteria for Small Bowel, Small Bowel/Liver, Multivisceral Transplant in HIV+ Members** - Small bowel transplantation in HIV+ members is considered medically necessary when all of the following conditions are met:

1. The member has a life expectancy of at least five years,
2. CD4 count  $\geq$  200 cells/mL for at least six months or  $>$  100 cells/mL if portal hypertension is present
3. Absence of HIV viremia\*
4. Demonstrated adherence to highly active antiretroviral therapy (HAART regimen for  $\geq$  six months
5. Available antiretroviral treatment options post-transplant.

\* Exception to absence to viremia – A demonstrated clinical response to HAART is considered evidence of suppressible HIV disease. Patients with absence of viremia on HAART may develop low viral loads if HAART is held due to severe liver failure before transplant. If this occurs in a patient with previously suppressible HIV disease and the

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patient is expected to resume HAART post-transplant, it is considered an exception to the absence of viremia and is not a contraindication to transplant.

### Limitations

1. All other medical and surgical therapies that might be expected to yield both short-and long-term survival comparable to that of transplantation must have been tried or considered.

### Background

Small bowel transplantation is done to restore intestinal function in patients/ members with irreversible intestinal failure. Small bowel transplantation (SBT) is the transplantation of a cadaveric intestinal allograft for the purpose of restoring intestinal function in patients with irreversible intestinal failure. SBT can be performed in isolation, in combination with transplantation of liver (for patients who have liver failure, which often occurs in children on long-term total parenteral nutrition (TPN)). Intestinal failure is defined as the loss of absorptive capacity of the small bowel secondary to severe primary gastrointestinal disease or surgically induced short bowel syndrome.

It may be associated with both mortality and profound morbidity. Multi-visceral transplantation includes organs in the digestive system (stomach, duodenum, pancreas, liver and intestine). The major causes of intestinal failure are volvulus, gastroschisis, necrotizing enterocolitis, splanchnic vascular thrombosis, inflammatory bowel disease, radiation enteritis, congenital diseases and trauma. Intestinal failure prevents oral nutrition and may be associated with both mortality and profound morbidity.

In addition to intestinal failure, candidates for multivisceral transplantation (MVT) have developed evidence of impending liver failure and other gastrointestinal problems such as pancreatic failure, thromboses of the celiac axis and the superior mesenteric artery, or pseudo-obstruction affecting the entire gastrointestinal tract.

### Codes:

Small Bowel Transplantation	
Code	Description
<b>CPT codes covered if selection criteria are met (If Appropriate):</b>	
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



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- Conference Session]. <http://kff.org/global-health-policy/event/aids-2010-the-double-edged-sword-long-term-complications-of-art-and-hiv/>
9. Khan FA, Selvaggi G. Overview of intestinal and multivisceral transplantation. UpToDate® – Last updated June 4, 2015. Topic 4595 Version 11.0. [http://www.uptodate.com/contents/overview-of-intestinal-and-multivisceral-transplantation?topicKey=GAST%2F4595&elapsedTimeMs=4&source=search\\_result&searchTerm=intestinal+transplantation&selectedTitle=1%7E23&view=print&displayedView=full](http://www.uptodate.com/contents/overview-of-intestinal-and-multivisceral-transplantation?topicKey=GAST%2F4595&elapsedTimeMs=4&source=search_result&searchTerm=intestinal+transplantation&selectedTitle=1%7E23&view=print&displayedView=full)
  10. Medline Plus: Medical Encyclopedia. Short Bowel Syndrome. Last reviewed: 05/15/2014. <http://www.nlm.nih.gov/medlineplus/ency/article/000237.htm>.
  11. O'Grady J, Taylor C. Guidelines for Liver Transplantation in Patients with HIV Infection. April 2005. Reviewed and endorsed by British Transplantation Society Standards Committee, Department of HIV Medicine, and the Renal Unit Royal Free Hospital, London, Central Middlesex Hospital, London. <http://www.bhiva.org/documents/Guidelines/Liver%20Transplantation/Transplant-guide.pdf>
  12. PubMed Health: A.D.A.M. Medical Encyclopedia- Short Bowel Syndrome, Last Reviewed May15, 2014. <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001284/>
  13. Roland ME, Stock PG: Solid organ transplantation is a reality for patients with HIV infection. Curr HIV/AIDS Report. 2006 Sep; 3(3):132-138. <http://www.ncbi.nlm.nih.gov/pubmed/16970840>
  14. Steinman TI, Becker BN, Frost AE, et al.: Guidelines for the referral and management of patients eligible for solid organ transplantation. Transplantation 2001 May; 71(9):1189-1204. <http://www.ncbi.nlm.nih.gov/pubmed/11397947>
  15. Stock PG, Roland ME.: Evolving clinical strategies for transplantation in the HIV-positive recipient. Transplantation 2007 Sep; 84(5): 563-571. <http://www.hemophilia.ca/files/Stock%20and%20Roland%20September%202007.pdf>
  16. U.S. Preventive Services Task Force: Recommendations for adults. Accessed April 2017. <http://www.uspreventiveservicestaskforce.org/>

### Disclaimer:

Northern Light Employee Health Plan medical payment and prior authorization policies do not constitute medical advice and are not intended to govern or otherwise influence the practice of medicine. The policies constitute only the reimbursement and coverage guidelines of Northern Light Employee Health Plan and its affiliated managed care entities. Coverage for services varies for individual members in accordance with the terms and conditions of applicable Certificates of Coverage, Summary Plan Descriptions, or contracts with governing regulatory agencies.

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Northern Light Employee Health Plan reserves the right to review and update the medical payment and prior authorization guidelines in its sole discretion. Notice of such changes, if necessary, shall be provided in accordance with the terms and conditions of provider agreements and any applicable laws or regulations.

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