APPENDIX to Small Bowel Transplantation Policy

Prior Authorization Requirements

This service (or procedure) is considered **medically necessary** in certain instances and **investigational** in others (refer to policy for details).

For instances when the indication is **medically necessary**, clinical evidence is required to determine **medical necessity**.

For instances when the indication is **investigational**, you may submit additional information to the Transplant Case Management Department.

Within five days before the actual date of service, the Provider MUST confirm with Blue Shield that the member's health plan coverage is still in effect. Blue Shield reserves the right to revoke an authorization prior to services being rendered based on cancellation of the member's eligibility. Final determination of benefits will be made after review of the claim for limitations or exclusions.

Questions regarding the applicability of this policy should also be directed to the Transplant Case Management Department. Please call 1-800-637-2066 ext. 3507708 or visit the Provider Portal www.blueshieldca.com/provider.

Evidence Basis for the Policy

Rationale

Cadaveric Small Bowel Transplant

Intestinal failure may be the result of congenital defect, surgical resection, or disease-associated loss of absorption. Short bowel syndrome (SBS) is one of the more common examples. Intestinal failure is characterized by the inability to maintain protein-energy, fluid, electrolyte, or micronutrient balance through enteral feedings (O'Keefe, 2006). Patients with intestinal failure require intravenous total parenteral nutrition (TPN) to meet their nutritional needs.

Although TPN is life sustaining for patients with SBS and other types of intestinal failure, long-term therapy is associated with severe complications including catheter-related sepsis, restricted vascular access and progressive liver failure. Small bowel transplant has been shown to be an effective option for patients meeting specific criteria, including the failure of TPN. A typical small bowel transplant involves the removal of the small intestine from a deceased donor, removal of the recipient's small intestine, and replacement with the donor intestine. The intent of the transplant is to normalize nutrient absorption in previously compromised patients.

Recent literature emphasizes the importance of timely referral for intestinal transplantation to avoid the necessity of combined small bowel-liver transplantation. In light of improved survival

rates, some believe small bowel transplant should be considered for patients developing severe TPN-related complications and not be limited to patients in which severe complications of TPN have already occurred. (Maltarese et al., 2007) However, as noted by Vianna and colleagues (2008) in their report on the status of intestinal transplantation, no randomized trials have compared intestinal transplantation to long-term parenteral nutrition, and optimal timing for earlier transplantation has not been established. Data reported in the 2008 United States Organ Procurement and Transplantation Network and the Scientific Registry of Transplant Recipients (OPTN/SRTR) indicate small intestinal graft and patient survival rates of 68.3% and 81.4% at one year, 57.4% and 70.6% at three years, 36.3% and 56.2% at five years and 25.2% and 46.4% at ten years.

Combined small bowel-liver transplants are a treatment option in patients with intestinal failure and irreversible liver disease (Middleton & Jamieson, 2005; Vianna et al., 2008). This procedure is more commonly used in pediatric cases where TPN liver disease has been more of a problem than with adults (Middleton & Jamieson, 2005). Graft and patient survival rates are not statistically different for combined small bowel-liver transplants and range from approximately 86% at one year to approximately 37% at ten years.

Multivisceral transplantation in patients with SBS, liver failure, and other gastrointestinal problems such as pancreatic failure, vascular thromboses, or pseudo-obstruction affecting the gastrointestinal tract is becoming more common. According to the 2008 OPTN/SRTR data, the number of patients receiving multi-organ transplants within one year of listing increased from 29% in 1998 to 37% in 2006. A 2003 report prepared by the Medical Advisory Secretariat (MAS) to the Canadian Ministry of Health and Long Term Care indicates mean one-year graft/patient survival rates of 63%/63% for multi-visceral transplants in comparison to 69%/55% for isolated small bowel and 66%/63% for small bowel-liver transplants. A recent review article published by Mao and associates (2009) concluded that although additional study is needed to improve survival rates and reduce complications, survival rates following multivisceral transplant are similar to those reported for other solid organs.

Living-Related Small Bowel Transplant

Cadaveric intestines are most commonly used for intestinal transplant, but some centers are using a portion of intestine harvested from a living-related donor. Benedetti et al. (2006) reported outcomes from four children and seven adults who underwent 12 living-related small bowel transplantations between 1998 and 2004. All donors were reported to have had uneventful recovery following removal of up to 40% of the small intestine. The three-year patient survival was 82%, with graft survival of 75%. Longer follow-up from the earlier cases was not reported. Gangemi and Benedetti (2006) published a literature review of living-related donor small bowel transplantation reports from 2003 to 2006. The authors comment that, "Due to the excellent result in modern series of deceased donor bowel transplantation, widespread use of the procedure (living-related donor) should not be recommended, in consideration of the potential risks to the donor. Furthermore, few centers have acquired the necessary experience with the procedure."

Potential advantages of living-related donor transplant include the ability to plan the transplantation electively and better antigen matching leading to improved management of rejection. Living-related small bowel transplantation may be considered medically necessary

when a cadaveric intestinal transplant is not available. Routine use of living-related donor intestinal transplants is considered not medically necessary because the net health outcome associated with this procedure is reduced (compared to cadaveric transplant) because of donor-related morbidity.

Benefit Application

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal mandates (e.g., Federal Employee Program (FEP)) prohibit Plans from denying Food and Drug Administration (FDA) - approved technologies as investigational. In these instances, plans may have to consider the coverage eligibility of FDA-approved technologies on the basis of medical necessity alone.

This Policy relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore, contract language should be reviewed before applying the terms of the Policy. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement.

Type	Number	Description
CPT	44132	Donor enterectomy (including cold preservation), open; from cadaver donor
	44133	Donor enterectomy (including cold preservation), open; partial, from living donor
	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

Type	Number	Description
	47133	Donor hepatectomy (including cold preservation), from cadaver donor
	47135	Liver allotransplantation; orthotopic, partial or whole, from cadaver or living donor, any age
	47136	Liver allotransplantation; heterotopic, partial or whole, from cadaver or living donor, any age
	47140	Donor hepatectomy (including cold preservation), from living donor; left lateral segment only (segments II and III)
	47142	Donor hepatectomy (including cold preservation), from living donor; total right lobectomy (segments V, VI, VII and VIII)
	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 comm
	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 comm
	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 comm
	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
	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 arte

Type	Number	Description
	48552	Backbench reconstruction of cadaver donor pancreas allograft prior to transplantation, venous anastomosis, each
	48554	Transplantation of pancreatic allograft
HCPC	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
ICD9 Procedure	00.91	Transplant from live related donor
	00.92	Transplant from live non-related donor
	00.93	Transplant from cadaver
	45.62	Other partial resection of small intestine
	45.63	Total removal of small intestine
	46.97	Transplant of intestine
	50.22	Partial hepatectomy
	50.4	Total hepatectomy
	50.51	Auxiliary liver transplant
	50.59	Other transplant of liver
	52.82	Homotransplant of pancreas
ICD9 Diagnosis	All Diagnoses	
Place of Service	All Places of Service	

Tables

N/A

Definitions

Multivisceral transplant - Intestinal transplant that includes the small bowel and liver and one or more of the following organs: stomach, spleen, pancreas and colon.

Short bowel syndrome - A malabsorptive syndrome resulting from severe intestinal disease or the surgical removal of a large portion of the small intestine.

Total parenteral nutrition (TPN) - A method of supplying intravenous nutrients to children or adults who are unable to meet their nutritional needs through oral or enteral feedings.

Index / Cross Reference of Related BSC Medical Policies

The following Medical Policies share diagnoses and/or are equivalent BSC Medical Policies:

N/A

Key / Related Searchable Words

N/A

References

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- Vianna RM, Mangus RS, Tector AJ. Current status of small bowel and multivisceral transplantation. Adv Surg 2008; 42:129-50

Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

Effective Date	Action	Reason
6/9/1993	New Policy Adoption	Medical Policy Committee
2/28/2002	Policy Revision	Transplant Team Review
4/2/2010	Policy title change from Small Bowel Transplantation with or without Liver Transplantation Policy revision with position change	Medical Policy Committee
1/3/2011	Policy Revision without position change	Administrative Review

The materials provided to you are guidelines used by this plan to authorize, modify, or deny care for persons with similar illness or conditions. Specific care and treatment may vary depending on individual need and the benefits covered under your contract. These Policies are subject to change as new information becomes available.

Click here to view the policy statement for this policy

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