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Corporate Medical Policy

Liver Transplant and Combined Liver-Kidney Transplant

File Name: liver_transplant_and_combined_liver_kidney_transplant
Origination: 12/1995
Last Review: 4/2024

Description of Procedure or Service

Liver transplantation is currently the treatment of last resort for patients with end-stage liver disease. Liver transplantation may be performed with liver donation after brain or cardiac death or with a liver segment donation from a living donor. Patients are prioritized for transplant by mortality risk and severity of illness criteria developed by the Organ Procurement and Transplantation Network (OPTN) and the United Network of Organ Sharing (UNOS). The severity of illness is determined by the Model for End-stage Liver Disease (MELD) and Pediatric End-stage Liver Disease (PELD) scores. Scoring on the MELD and PELD uses a continuous disease severity scale based entirely on objective laboratory values.

Certain populations are prioritized as Status 1A (e.g., acute liver failure with a life expectancy of fewer than 7 days without a liver transplant) or Status 1B (pediatric patients with chronic liver disease).

Following Status 1, donor livers are prioritized to those with the highest scores on MELD or PELD. These scales have been found to be highly predictive of the risk of dying from liver disease for patients waiting on the transplant list. The MELD score incorporates bilirubin, prothrombin time (i.e., international normalized ratio [INR]), and creatinine into an equation, producing a number that ranges from 6 to 40. The PELD score incorporates albumin, bilirubin, INR, growth failure, and age at listing. Waiting time will only be used to break ties among patients with the same MELD or PELD score and blood type compatibility. Status 7 describes patients who are temporarily inactive on the transplant waiting list due to being temporarily unsuitable for transplantation. Pediatric patients who turn 18 are Status X.

Due to the scarcity of donor livers, a variety of strategies have been developed to expand the donor pool. For example, split graft refers to dividing a donor liver into 2 segments that can be used for 2 recipients. Living donor liver transplantation (LDLT) is now commonly performed for adults and children from a related or unrelated donor. Depending on the graft size needed for the recipient, either the right lobe, left lobe or the left lateral segment can be used for LDLT. In addition to addressing the problem of donor organ scarcity, LDLT allows the procedure to be scheduled electively before the recipient's condition deteriorates or serious complications develop. LDLT shortens the preservation time for the donor liver and decreases disease transmission from donor to recipient.

Related Policy:
Small Bowel, Small Bowel with Liver, or Multivisceral Transplant

******Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.***

Policy

BCBSNC will provide coverage for Liver Transplant when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.

Benefits Application

Please refer to certificate for availability of benefit. Certificates may specifically exclude transplantation procedures from coverage. Certificate language should verify application of medical necessity in making benefit determinations. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

- Coverage for medically necessary liver transplant procedures will be determined based on the member's certificate, the medical criteria and guidelines for coverage, and review on an individual consideration basis.
- The benefit begins at the time of admission for the transplant, or once the patient is determined eligible for the transplant, which may include tests or office visits prior to the actual transplant.
- The benefit ends at the time of discharge from the hospital, or at the end of the required follow-up, including the immunosuppressive drugs administered on an outpatient basis.
- Expenses incurred in the evaluation and procurement of organs and tissues are benefits when billed by the hospital. Included in these expenses may be specific charges for participation with registries for organ procurement, operating rooms, supplies, use of hospital equipment, and transportation of the tissue or organ to be evaluated.

Additional services may be covered within the scope of the human organ transplant (HOT) benefit:

- Hospitalization of the recipient for medically recognized transplants from a donor to the transplant recipient
- Pre-hospital work-up and hospitalization of a living donor undergoing a partial hepatectomy (removal of part of the liver) should be considered as part of the recipient transplant costs
- Evaluation tests requiring hospitalization to determine the suitability of both potential and actual donors, when such tests cannot be safely and effectively performed on an outpatient basis
- Hospital room, board, and general nursing in semi-private rooms
- Special care units, such as coronary and intensive care
- Hospital ancillary services
- Physicians' services for surgery, technical assistance, administration of anesthetics, and medical care
- Acquisition, preparation, transportation and storage of the organ
- Diagnostic services
- Drugs that require a prescription by federal law

Benefits are not generally available for the following:

1) Human organ transplant (HOT) services, for which the cost is covered/funded by governmental, foundation, or charitable grants.
2) Organs that are sold rather than donated to a recipient.
3) An artificial organ.

Certificates may specifically exclude certain transplant services (e.g., artificial organs). Please refer to certificate for "Transplants Exclusions".

When Liver Transplant and Combined Liver-Kidney Transplant are covered

A.) A liver transplant using a cadaver or living donor is considered medically necessary for carefully selected individuals with end-stage liver failure due to irreversibly damaged livers from conditions that include, but are not limited to the following:

1) Hepatocellular diseases
    a) Alcoholic liver disease
    b) Viral hepatitis (A, B, C, or non-A, non-B)
    c) Autoimmune hepatitis
    d) Alpha-1 Antitrypsin deficiency
    e) Hemochromatosis
    f) Non-alcoholic steatohepatitis
    g) Protoporphyria
    h) Wilson's disease
2) Cholestatic liver diseases
    a) Primary biliary cirrhosis
    b) Primary sclerosing cholangitis with development of secondary biliary cirrhosis
    c) Biliary atresia
3) Vascular diseases
    a) Budd-Chiari syndrome
4) Primary hepatocellular carcinoma
5) Inborn errors of metabolism
6) Trauma and toxic reactions
7) Miscellaneous
    a) Familial amyloid polyneuropathy

Liver transplantation may be considered medically necessary in individuals with polycystic disease of the liver who have massive hepatomegaly causing obstruction or functional impairment.

Liver transplantation may be considered medically necessary in individuals with unresectable hilar cholangiocarcinoma.

Liver transplantation may be considered medically necessary in pediatric individuals with nonmetastatic hepatoblastoma.

Liver *retransplantation* may be considered medically necessary in individuals with:

a) Primary graft non-function
b) Hepatic artery thrombosis
c) Chronic rejection
d) Ischemic type biliary lesions after donation after cardiac death
e) Recurrent non-neoplastic disease causing late graft failure

Combined liver-kidney transplantation may be considered medically necessary in individuals who qualify for liver transplantation and have advanced irreversible kidney disease.

When Liver Transplant and Combined Liver-Kidney Transplant are not covered

A) Liver transplantation is considered investigational in the following individuals:

1) Individuals with intrahepatic cholangiocarcinoma
2) Individuals with neuroendocrine tumors metastatic to the liver

B) Liver transplantation is considered not medically necessary in the following individuals:

1) Individuals with hepatocellular carcinoma that has extended beyond the liver.
2) Individuals with ongoing alcohol and/or drug abuse. (Evidence for abstinence may vary among liver transplant programs, but generally a minimum of 3 months is required.)

C) Liver Transplantation is considered investigational in all other situations not described above.

Policy Guidelines

It is recommended that all transplant requests be reviewed by the Plan Medical Director or his or her designee. Only those individuals accepted for transplantation by a transplantation center and actively listed for transplant should be considered for precertification or prior approval. Guidelines should be followed for transplant network or consortiums, if applicable.

General

Potential contraindications subject to the judgment of the transplant center:

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

Liver Specific Patient Selection Criteria

The MELD and PELD scores range from 6 (less ill) to 40 (gravely ill). The MELD and PELD scores will change during an individual's tenure on the waiting list.

Individuals with liver disease related to alcohol or drug abuse must be actively involved in a substance abuse treatment program.

Tobacco consumption is a contraindication.

Individuals with polycystic disease of the liver do not develop liver failure but may require transplantation due to the anatomic complications of a hugely enlarged liver. The MELD/PELD score may not apply to these cases. One of the following complications should be present:

- Enlargement of liver impinging on respiratory function
- Extremely painful enlargement of liver
- Enlargement of liver significantly compressing and interfering with function of other abdominal organs

Individuals with familial amyloid polyneuropathy do not experience liver disease, per se, but develop polyneuropathy and cardiac amyloidosis due to the production of a variant transthyretin molecule by the liver. MELD/PELD exception criteria and scores may apply to these cases. Candidacy for liver transplant is an individual consideration based on the morbidity of the polyneuropathy. Many individuals may not be candidates for liver transplant alone due to coexisting cardiac disease.

Criteria used for selection of hepatocellular carcinoma patients eligible for liver transplant include the Milan criteria, which is considered the criterion standard, the University of California, San Francisco (UCSF) expanded criteria, and UNOS criteria.

Milan criteria: a single tumor 5 cm or less in diameter or 2 to 3 tumors 3 cm or less

UCSF expanded criteria: a single tumor 6.5 cm or less or up to 3 tumors 4.5 cm or less, and a total tumor size of 8 cm or less

UNOS Stage T2 criteria: a single tumor 2 cm or greater and up to 5 cm or less in diameter or 2 to 3 tumors 1 cm or greater and up to 3 cm or less and without extrahepatic spread or macrovascular invasion. UNOS criteria were updated in 2022. (https://optn.transplant.hrsa.gov/media/1200/optn_policies.pdf#nameddest=Policy_09)

Individuals with hepatocellular carcinoma are appropriate candidates for liver transplant only if the disease remains confined to the liver. Therefore, the individual should be periodically monitored while on the waiting list, and if metastatic disease develops, the individual should be removed from the transplant waiting list. In addition, at the time of transplant, a backup candidate should be scheduled. If locally extensive or metastatic cancer is discovered at the time of exploration prior to hepatectomy, the transplant should be aborted, and the backup candidate scheduled for transplant.

Note that liver transplantation for those with T3 HCC is not prohibited by UNOS guidelines, but these individuals do not receive any priority on the waiting list. All individuals with HCC awaiting transplantation are reassessed at 3-month intervals. Those whose tumors have progressed and are no longer T2 tumors will lose the additional allocation points.

Additionally, nodules identified through imaging of cirrhotic livers are given a Class 5 designation. Class 5B and 5T nodules are eligible for automatic priority. Class 5B criteria consist of a single nodule 2 cm or larger and up to 5 cm (T2 stage) that meets specified imaging criteria. Class 5T nodules have undergone subsequent loco-regional treatment after being automatically approved on initial application or extension. A single Class 5A nodule (greater than 1 cm and less than 2 cm) corresponds to T1 HCC and does not qualify for automatic priority. However, combinations of Class 5A nodules are eligible for automatic priority if they meet stage T2 criteria. Class 5X lesions are outside of stage T2 and are not eligible for automatic exception points. Nodules less than 1 cm are considered indeterminate and are not considered for additional priority. Therefore, the UNOS allocation system provides strong incentives to use loco-regional therapies to downsize tumors to T2 status and to prevent progression while on the waiting list.

Cholangiocarcinoma

According to the Organ Procurement and Transplantation Network (OPTN) policy on liver allocation, candidates with cholangiocarcinoma meeting the following criteria will be eligible for a MELD or PELD exception with a 10% mortality equivalent increase every 3 months:

- Centers must submit a written protocol for patient care to the OPTN and UNOS Liver and Intestinal Organ Transplantation Committee before requesting a MELD score exception for a candidate with cholangiocarcinoma. This protocol should include selection criteria, administration of neoadjuvant therapy before transplantation, and operative staging to exclude individuals with regional hepatic lymph node metastases, intrahepatic metastases, and/or extrahepatic disease. The protocol should include data collection as deemed necessary by the OPTN /UNOS Liver and Intestinal Organ Transplantation Committee.
- Candidates must satisfy diagnostic criteria for hilar cholangiocarcinoma: malignant-appearing stricture on cholangiography and one of the following: carbohydrate antigen 19-9 100 U/mL, or biopsy or cytology results demonstrating malignancy, or aneuploidy. The tumor should be considered unresectable on the basis of technical considerations or underlying liver disease (eg, primary sclerosing cholangitis).

- If cross-sectional imaging studies (computed tomography scan, ultrasound, magnetic resonance imaging) demonstrate a mass, the mass should be 3 cm or less.
- Intra- and extrahepatic metastases should be excluded by cross-sectional imaging studies of the chest and abdomen at the time of initial exception and every 3 months before score increases.
- Regional hepatic lymph node involvement and peritoneal metastases should be assessed by operative staging after completion of neoadjuvant therapy and before liver transplantation. Endoscopic ultrasound-guided aspiration of regional hepatic lymph nodes may be advisable to exclude individuals with obvious metastases before neoadjuvant therapy is initiated.
- Transperitoneal aspiration or biopsy of the primary tumor (either by endoscopic ultrasound, operative, or percutaneous approaches) should be avoided because of the high risk of tumor seeding associated with these procedures.

Summary

For individuals who have hepatocellular disease who receive liver transplant, the evidence includes registry studies and systematic reviews. Relevant outcomes include overall survival (OS), morbid events, and treatment-related morbidity and mortality. Studies on liver transplantation for viral hepatitis have found that survival is lower than for other liver diseases. Although these statistics raise questions about the most appropriate use of a scarce resource (donor livers), the long-term survival rates are significant in a group of patients who have no other treatment options. Also, survival can be improved by eradication of hepatitis virus before transplantation. For patients with nonalcoholic steatohepatitis, OS rates have been shown to be similar to other indications for liver transplantation. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have primary hepatocellular carcinoma who receive liver transplant, the evidence includes systematic reviews of observational studies. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. In the past, long-term outcomes in patients with primary hepatocellular malignancies had been poor (19%) compared with the OS of liver transplant recipients. However, recent use of standardized patient selection criteria (eg, the Milan criteria diameter) has dramatically improved OS rates. In appropriately selected patients, liver transplant has been shown to result in higher survival rates than resection. In patients who present with unresectable organ-confined disease, transplant represents the only curative approach. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have extrahepatic cholangiocarcinoma who receive liver transplant, the evidence includes systematic reviews of observational studies and individual registry studies. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. For patients with extrahepatic (hilar or perihilar) cholangiocarcinoma who are treated with adjuvant chemotherapy, five year survival rates have been reported as high as 76%. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have intrahepatic cholangiocarcinoma who receive liver transplant, the evidence includes registry studies. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. In a registry study comparing outcomes in patients with intrahepatic cholangiocarcinoma who received liver transplantation to those who received surgical resection of the liver, no differences were found in OS, length of stay, or unplanned 30-day readmission rates between groups. Additional studies reporting survival rates in patients with intrahepatic cholangiocarcinoma or in mixed populations of patients with extrahepatic and intrahepatic cholangiocarcinoma have reported 5-year survival rates of less than 30%. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have metastatic neuroendocrine tumors who receive liver transplant, the evidence includes systematic reviews of case series. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. In select patients with nonresectable, hormonally active liver metastases refractory to medical therapy, liver transplantation has been considered as an option to

extend survival and minimize endocrine symptoms. While there may be centers that perform liver transplants on select patients with neuroendocrine tumors, the available studies are limited by their heterogeneous populations. Further studies are needed to determine appropriate selection criteria. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have pediatric hepatoblastoma who receive liver transplant, the evidence includes case series. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. The literature on liver transplantation for pediatric hepatoblastoma is limited, but case series have demonstrated good outcomes and high rates of long-term survival. Additionally, nonmetastatic pediatric hepatoblastoma is included in United Network for Organ Sharing criteria for patients eligible for liver transplantation. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have a failed liver transplant who receive liver retransplant, the evidence includes observational studies. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. Case series have demonstrated favorable outcomes with liver retransplantation in certain populations, such as when criteria for an original liver transplantation are met for retransplantation. While some evidence has suggested outcomes after retransplantation may be less favorable than for initial transplantation in some patients, long-term survival benefits have been demonstrated. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals with indications for liver and kidney transplant who receive combined liver-kidney transplant, the evidence includes a systematic review of retrospective observational studies in adults and several individual registry studies. Relevant outcomes include OS, morbid events, and treatment-related morbidity and mortality. Most of the evidence involves adults with cirrhosis and kidney failure. Indications for combined liver-kidney transplant in children are rare and often congenital, and include liver-based metabolic abnormalities affecting the kidney, along with structural diseases affecting both the liver and kidney. In both adults and children, comparisons with either liver or kidney transplantation alone would suggest that combined liver-kidney transplant is no worse, and possibly better, for graft and patient survival. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Liver transplant is an accepted treatment of end-stage liver disease that provides a survival benefit in appropriately selected patients and may be considered medically necessary for the indications listed in the Policy Statement and in patients otherwise meeting United Network of Organ Sharing criteria. Liver transplantation is investigational in patients in whom the procedure is expected to be futile due to comorbid disease or in whom posttransplantation care is expected to worsen comorbid conditions significantly. Based on survival data, transplantation in patients with hilar cholangiocarcinoma who meet strict eligibility criteria may be considered medically necessary; transplantation for neuroendocrine tumors metastatic to the liver is considered investigational. Clinical vetting supported retransplantation following primary graft nonfunction, hepatic artery thrombosis, ischemic biliary injury after donation after cardiac death, chronic rejection, or certain recurrent non-neoplastic diseases resulting in end-stage liver failure in a primary transplant. As a result, retransplantation after initial failed liver transplant may be considered medically necessary in these situations.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable Codes: 47133, 47135, 47140, 47141, 47142, 47143, 47144, 47145, 47146, 47147, S2152

While charges for the retrieval of organs are considered eligible for coverage when patient criteria are met, any charges for the organ itself are considered ineligible for coverage.

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources

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Consultant Review 11/95

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Independent Consultant Review - 2/99

Medical Policy Advisory Group - 12/99

Specialty Matched Consultant Advisory Panel - 10/2000

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BCBSA Medical Policy Reference Manual, 5/15/02; 7.03.06

Specialty Matched Consultant Advisory Panel - 8/2002

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Medical Director review 4/2011

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Specialty Matched Consultant Advisory Panel 5/2013

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Specialty Matched Consultant Advisory Panel 5/2015

Specialty Matched Consultant Advisory Panel 5/2016

Specialty Matched Consultant Advisory Panel 5/2017

For Policy retitled Liver Transplant and Combined Liver-Kidney Transplant

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.03.06, 9/14/2017

Specialty Matched Consultant Advisory Panel 5/2018

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.03.06, 8/9/2018

Specialty Matched Consultant Advisory Panel 6/2019

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.03.06, 8/8/2019

Specialty Matched Consultant Advisory Panel 5/2020

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.03.06, 8/13/2020

Specialty Matched Consultant Advisory Panel 4/2021

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.03.06, 8/12/2021

Specialty Matched Consultant Advisory Panel 4/2022

Specialty Matched Consultant Advisory Panel 4/2023

Specialty Matched Consultant Advisory Panel 4/2024

Medical Director Review 4/2024

Policy Implementation/Update Information

12/95	Local policy issued.
12/96	Reaffirmed.
11/98	Added statements from the National Association policy and Consultant reviews.
2/99	Independent Consultant Review
6/99	Reformatted, Description of Procedure or Service changed, Medical Term Definitions added.
12/99	Medical Policy Advisory Group
10/00	Specialty Matched Consultant Advisory Panel review. No change recommended in criteria. System coding changes. Medical Policy Advisory Group review. No change in criteria. Approve.
2/01	Revised. Added statements under the covered section. Added cadaver or living donor. Typo corrected.
2/03	Specialty Matched Consultant Advisory Panel review. No change to policy.
5/03	Description of Procedure or Service section expanded to provide more detail. General Criteria reformatted.
4/04	Benefits Application and Billing/Coding sections updated for consistency. Code S2152 added to Billing/Coding section.
9/9/04	Specialty Matched Consultant Advisory Panel review. No change to policy. Added new 2004 CPT codes 47140, 47141, 47142 to Billing/Coding section and removed code 47134 (code deleted, to report use 47140).
1/6/05	Codes 47143, 47144, 47145, 47146, 47147 added to the Billing/Coding section of policy.
10/2/06	Under "When Covered", A.1.b. "Viral hepatitis (all blood types)", now reads "Viral induced-hepatitis (all viral types)". Under "When Not Covered" 2. Contraindications, removed a. HIV- positive patient. Under "Policy Guidelines" C. Disease Specific Indications, 6.b. added "or HBeAg neg, HBV DNA pos,"; added 9. "HIV positivity: CD4 count >100cells/mm□; HIV-1 RNA undetectable; On stable anti-retroviral therapy >3 months; No other complications from AIDS (e.g., opportunistic infection, including aspergillus, tuberculosis, coccidioses mycosis, resistant fungal infections, Kaposi's sarcoma, or other neoplasm); Meets all other criteria for transplantation. It is likely that each individual transplant center will have explicit patient selection criteria for HIV positive patients." Reference sources added. (pmo)
5/11/09	Under "When Not Covered", removed 3.a. Patients over age 70; added #4. "Certificate may exclude certain transplant services (e.g., artificial organs). Please refer to certificates for "Transplants Exclusions".

Under "Policy Guidelines", B. Risk Factors, #2 now reads: "Nonhepatic neoplastic disease - patient must be off chemotherapy, determined to be disease free by usual monitoring studies, and have an expected 5-year survival rate of 80% or greater."; also added #7. "Advanced physiological age."
Reference sources added. (pmo)

6/22/10 Policy Number(s) removed (amw)

5/24/11 Description section extensively revised. No change to the "When Liver Transplants Are Covered" section. Some information previously in the Covered/Not Covered sections was moved to the Benefits Application section. (adn)

5/29/12 Policy statements for medically necessary indications unchanged. Policy statements on hepatocellular carcinoma that has extended beyond the liver and ongoing alcohol and/or drug abuse moved from investigational to not medically necessary. Removed "Patients with an active infection" from the investigational policy statement. Potential contraindications added to Policy Guidelines. Specialty Matched Consultant Advisory Panel 5/16/12. (sk)

2/26/13 Reference added. Description section revised. Non-alcoholic steatohepatitis cirrhosis added to the medically necessary policy statement; a statement added that retransplantation may be considered medically necessary; a statement added that extrahepatic peri-hilar or hilar cholangiocarcinoma may be considered medically necessary. Information on other intrahepatic or extrahepatic malignancies including non-peri-hilar or non-hilar cholangiocarcinoma and recurrent hepatocellular carcinoma salvage treatment added to the Policy guidelines. Medical Director review. (sk)

5/28/13 Specialty Matched Consultant Advisory Panel 5/15/13. (sk)

4/1/14 References added. Policy Guidelines updated. Policy statement on polycystic liver disease moved to a separate policy statement. Pediatric non-metastatic hepatoblastoma added as may be medically necessary. Policy statement added that liver transplantation is considered investigational in all other situations not described. Senior Medical Director review. (sk)

6/10/14 Specialty Matched Consultant Advisory Panel 5/27/14. (sk)

3/31/15 Reference added. (sk)

7/1/15 Specialty Matched Consultant Advisory Panel 5/27/15. Removed related guidelines titled Therapeutic Apheresis and Radiofrequency Ablation of Primary or Metastatic Liver Tumors as these guidelines have been archived. (sk)

7/1/16 Specialty Matched Consultant Advisory Panel 5/25/16. (sk)

6/30/17 Specialty Matched Consultant Advisory Panel 5/31/17. (sk)

For Policy retitled Liver Transplant and Combined Liver-Kidney Transplant

1/12/18 Reference added. Combined liver-kidney transplantation added to policy; considered medically necessary. Contraindication for smoking and HIV criteria added to Policy Guidelines. Policy title changed from Liver Transplant to Liver Transplant and Combined Liver-Kidney Transplant. Policy Guidelines summary statements extensively revised. (sk)

6/29/18 Specialty Matched Consultant Advisory Panel 5/23/18. Diagnostic criteria for cholangiocarcinoma added to Policy Guidelines. (sk)

10/12/18 Reference added. Description section updated. Policy Guidelines updated. (sk)

7/16/19 Specialty Matched Consultant Advisory Panel 6/28/2019. (sk)

3/24/20	Reference added. (sk)
6/23/20	CPT 47136 removed from policy; code expired. Specialty Matched Consultant Advisory Panel 5/20/2020. (bb)
5/18/21	Reference added. Description section updated. Specialty Matched Consultant Advisory Panel 4/21/2021. (sk)
6/14/22	Reference added. Policy Guidelines updated. Specialty Matched Consultant Advisory Panel 4/20/2022. (sk)
6/30/23	Specialty Matched Consultant Advisory Panel 4/19/2023. (sk)
5/1/24	Reference added. Specialty Matched Consultant Advisory Panel review 4/2024. Medical Director review 4/2024. (rp)