Guidance to Liver Transplant Programs and the National Liver Review Board for: Adult MELD Exception Review

7/1/2025

Summary and Goals

For many candidates with chronic liver disease the risk of death without access to liver transplant can be accurately predicted by the MELD score, which is used to prioritize candidates on the waiting list. However, for some candidates the need for liver transplant is not based on the degree of liver dysfunction due to the underlying liver disease but rather a complication of the liver disease. These complications have an increased risk of mortality or waitlist dropout without access to timely transplant and are not reflected in the calculated MELD score.[1] This document summarizes available evidence to assist clinical reviewers in approving candidates for MELD exceptions. It contains guidance for specific clinical situations for use by the review board to evaluate common exceptional case requests for adult candidates with the following diagnoses, not all of which are appropriate for MELD exception:

- Ascites
- Budd Chiari
- GI Bleeding
- Hepatic Encephalopathy
- Hepatic Hydrothorax
- Hereditary Hemorrhagic Telangiectasia
- Polycystic Liver Disease (PLD)
- Primary Sclerosing Cholangitis (PSC) or Secondary Sclerosing Cholangitis (SSC)
- Metabolic Disease
- Multivisceral Transplant Candidates
- Post-Transplant Complications, including Early Allograft Dysfunction (EAD) in Reduced Size Livers (Small for Size Syndrome), Chronic Rejection, Diffuse Ischemic Cholangiopathy
- Pruritus

These guidelines are intended to promote consistent review of these diagnoses and summarize the Committee's recommendations to the OPTN Board of Directors.

This resource is not OPTN Policy, so it does not carry the monitoring or enforcement implications of policy. It is not an official guideline for clinical practice, nor is it intended to be clinically prescriptive or to define a standard of care. This resource is intended to provide guidance to transplant programs and the review board.

[1] Waitlist dropout is removal from the waiting list due to the candidate being too sick to transplant.

Background

A liver candidate receives a MELD[2] or, if less than 12 years old, a PELD[3] score that is used for liver allocation. The score is intended to reflect the candidate's disease severity, or the risk of 3-month mortality without access to liver transplant. When the calculated score does not reflect the candidate's medical urgency, a liver transplant program may request an exception score. A candidate that meets the criteria for one of nine diagnoses in policy is approved for a standardized MELD exception.[4] If the candidate does not meet criteria for standardized exception, the request is considered by the review board.

The OPTN Liver and Intestinal Organ Transplantation Committee (hereafter, "the Committee") has developed guidance for adult MELD exception candidates. The MELD Exceptions and Enhancements Subcommittee proposed these recommendations after reviewing the 2006 MELD Exception Study Group (MESSAGE) Conference, a descriptive analysis of recent MELD exception requests submitted to the OPTN, and available peer-reviewed literature. To support a recommendation for approving additional MELD exception points, there must have been adequate evidence of increased risk of mortality associated with the complication of liver disease.

This guidance replaces any independent criteria that OPTN regions used to request and approve exceptions, commonly referred to as "regional agreements." Review board members and transplant centers should consult this resource when considering MELD exception requests for adult candidates with the following diagnoses.

Recommendation

Ascites

There is inadequate evidence to support granting a MELD exception for ascites in adult candidates with the typical clinical symptoms associated with this diagnosis.
Ascites is a common clinical finding in liver transplant candidates. Refractory ascites, as defined by the International Ascites Club, occurs in 5-10% of patients with portal hypertension and has a 1-year mortality rate of approximately 50%.[5,6,7,8] Hyponatremia is common in patients with cirrhosis and refractory ascites from portal hypertension.[9,10,11] In January 2016, the OPTN implemented a modification to the MELD score to incorporate serum sodium for candidates with a calculated MELD

[2]Model for End-Stage Liver Disease
[3]Pediatric End-Stage Liver Disease
[4]Policy 9.3.C: Specific MELD/PELD Exceptions, Organ Procurement and Transplantation Network Policies.
[5]Moore, K.P., F. Wong, P. Gines, et al. "The management of ascites in cirrhosis: report on the consensus conference of the International Ascites Club." Hepatology 38 (2003): 258-66.
[6]Runyon, B.A., AASLD. "Introduction to the revised American Association for the Study of Liver Diseases Practice Guideline management of adult patients with ascites due to cirrhosis 2012." Hepatology 57 (2013): 1651-3.
[7]Runyon, B.A., Committee APG. "Management of adult patients with ascites due to cirrhosis: an update." Hepatology 49 (2009): 2087-107.
[8]Gines P., A. Cardenas, V. Arroyo, et al. "Management of cirrhosis and ascites." N Engl J Med 350 (2004):1646-54.
[9]Biggins, S.W., W.R. Kim, N.A. Terrault, et al. "Evidence-based incorporation of serum sodium concentration into MELD." Gastroenterology 130 (2006):1652-60.
[10]Porcel, A., F. Diaz, P. Rendon, et al. "Dilutional hyponatremia in patients with cirrhosis and ascites." Arch Intern Med 162 (2002):323-8.
[11]Gines, A., A. Escorsell, P. Gines, et al. "Incidence, predictive factors, and prognosis of the hepatorenal syndrome in cirrhosis with ascites." Gastroenterology 105 (1993):229-36.

greater than 11.[12] Much of the excess mortality risk related to ascites is similar to portal hypertension and hepatorenal syndrome and will be accurately reflected in the lab values used to calculate the MELD score, specifically the serum creatinine and serum sodium. Therefore, MELD exception for ascites is not recommended.

Budd Chiari

Approval of MELD exception points for adult candidates with Budd Chiari may be appropriate in some instances.

Liver transplant candidates with Budd Chiari syndrome can be considered for a MELD exception based on severity of liver dysfunction and failure of standard management. Documentation submitted for case review should include all of the following:

- Failed medical or surgical management (please specify)
- Any contraindications to Transjugular Intrahepatic Portosystemic Shunt (TIPS) or TIPS failure; specify specific contraindication
- Documentation that extrahepatic malignancy, which would exclude transplant eligibility, has been ruled out

Candidates meeting the criteria described above should be considered for a MELD exception score equal to MMaT-3.

Gastrointestinal Bleeding

There is inadequate evidence to support granting a specific MELD exception for gastrointestinal bleeding in adult candidates who experience acute or chronic blood loss independent of their calculated MELD.

There is also inadequate evidence to support a MELD exception for transfusion dependence independent of MELD with one exception, spur cell hemolytic anemia (SCHA).[13] However, due to the infrequent occurrence of SCHA in a transplant candidate, and its common association with recent alcohol use or active infection, MELD exception is not recommended. Similarly there is no evidence to support that candidates with transfusion dependence who develop antibodies while waiting warrant a MELD exception.[14,15]

Hepatic Encephalopathy

Hepatic encephalopathy (HE) is a complication of chronic liver with an associated mortality independent of MELD scoring. Presently, no additional MELD priority for HE is recommended in the absence of a

[12]Biggins, S.W. "Use of serum sodium for liver transplant graft allocation: a decade in the making, now is it ready for primetime?" Liver Transpl 21 (2015):279-81.
[13]Alexopoulou, A., L. Vasilieva, T. Kanellopoulou, et al. "Presence of spur cells as a highly predictive factor of mortality in patients with cirrhosis." J Gastroenterol Hepatol. 4 (2014):830-4.
[14]Lyles, T., A. Elliott, D.C. Rockey. "A risk scoring system to predict in-hospital mortality in patients with cirrhosis presenting with upper gastrointestinal bleeding." J Clin Gastroenterol 48 (2014):712-20.
[15]Flores-Rendón, A.R., J.A. González-González, D. García-Compean, et al. "Model for end stage of liver disease (MELD) is better than the Child-Pugh score for predicting in-hospital mortality related to esophageal variceal bleeding." Ann Hepatol 7 (2008):230-4.

widely available, reliable, objective assessment of its severity. [16, 17,18,19]

Hepatic Hydrothorax

Candidates with refractory hepatic hydrothorax have an increased mortality that may not otherwise be reflected in the candidate's MELD score and exceeds mortality due to refractory ascites.[20] In addition, the need for inpatient thoracentesis increases risk of acute-on-chronic liver failure (ACLF) compared to candidates with refractory ascites alone.[21] While TIPS can be a viable treatment in some candidates, this may be contraindicated in others. Therefore, adult liver transplant candidates with chronic, recurrent, hepatic hydrothorax that are *medically refractory* and for which *TIPS is contraindicated or has failed* [22] could be considered for a MELD exception provided that infectious and malignant causes have been ruled out.

Documentation submitted for initial case review should include the following:

- At least 1 L of pleural fluid removed four separate times in 6 weeks; report date and volume of each pleural fluid removal (including witness attestation by provider or RN if drainage catheter in place).
- Pleural fluid is transudative or portal hypertension related by one of the following:
    - Evidence of ascites
    - Pleural albumin-serum albumin gradient greater than or equal to 1.1
- Echocardiogram without evidence of heart failure
- Negative pleural fluid culture or cell count (provide date)
- Negative pleural fluid cytology (provide date)

Documentation submitted for subsequent maintenance of exception should include the following:

[16] Kerbert, Annarein J., Enric Reverter, Lara Verbruggen, Madelon Tieleman, Miguel Navasa, Bart J. Mertens, Sergio Rodríguez-Tajes, et al. "Impact of Hepatic Encephalopathy on Liver Transplant Waiting List Mortality in Regions with Different Transplantation Rates." *Clinical Transplantation* 32, no. 11 (2018). https://doi.org/10.1111/ctr.13412.

[17] Chiranjeevi Gadiparthi et al., "Waitlist Outcomes in Liver Transplant Candidates with High MELD and Severe Hepatic Encephalopathy," *Digestive Diseases and Sciences* 63, no. 6 (February 2018): pp. 1647-1653, https://doi.org/10.1007/s10620-018-5032-5.

[18] Cristina Lucidi et al., "Hepatic Encephalopathy Expands the Predictivity of Model for End-Stage Liver Disease in Liver Transplant Setting: Evidence by Means of 2 Independent Cohorts," *Liver Transplantation* 22, no. 10 (2016): pp. 1333-1342, https://doi.org/10.1002/lt.24517.

[19] Robert J. Wong, Robert G. Gish, and Aijaz Ahmed, "Hepatic Encephalopathy Is Associated with Significantly Increased Mortality among Patients Awaiting Liver Transplantation," *Liver Transplantation*, 2014, https://doi.org/10.1002/lt.23981.

[20] Higher mortality is associated with HH and mortality rates of 18, 30, and 60% at 6 months, 1 year, and 2 years have been demonstrated (PMID: 36148461). Refractory HH is associated with a higher 1-year mortality than refractory ascites (51% vs 19%, p=0.001) (PMID: PMID: 35534742).

[21] In patients with recurrent ascites, the development of HH was associated with a high mortality-hazard ratio of 4.35 (95% CI: 2.76–6.97)(doi.org/10.1007/s10620-021-07134-8). In addition, HH requiring inpatient thoracentesis associated with increased risk of ACLF (HR = 2.37 vs. refractory ascites alone, p = 0.01, controlling for MELD, AKI, infection, and prior 6-month hospitalizations) (PMID: 33185787). Multivariable modeling also showed that HH increased the risk of inpatient mortality (HR = 2.22 vs. refractory ascites alone, p = 0.04).

[22] Per AASLD guidelines, TIPS placement in patients with MELD scores as low as 18 in some studies and more clearly with MELD score >21 incurs higher mortality risk, and the beneficial outcome in hydrothorax highly relates to liver function and age.

• At least 1 L of pleural fluid removed four separate times in last 6 weeks; report date and volume of each pleural fluid removal (including witness attestation by provider or RN if drainage catheter in place).

Candidates meeting the criteria described above should be considered for a MELD exception score equal to MMaT-3. Centers will need to update documentation every 90 days to maintain exception status.

Hereditary Hemorrhagic Telangiectasia

Approval of MELD exception points for adult candidates with high output cardiac failure due to multiple arteriovenous (AV) malformations may be appropriate in some instances. Hereditary hemorrhagic telangiectasia is an uncommon, autosomal dominant genetic disorder characterized by mucocutaneous telangiectasias, as well as arteriovenous malformations in the brain, spine, lungs, gastrointestinal tract, and liver. The AV malformations can progress to high output cardiac failure, which eventually may be irreversible[23, 24].

Documentation submitted for case review should include the following:

- Documentation of high output cardiac failure by echocardiography or right heart catheterization, and symptoms of heart failure
- Imaging supporting intra-hepatic AV malformations or severe diffuse bilobar hepatic necrosis in the setting of hepatic AV malformation

Candidates meeting the criteria described above should be considered for a MELD exception score equal to MMaT -3. Severe ongoing complications of heart failure may warrant MMaT.

Polycystic Liver Disease (PLD)

Candidates with PLD who failed medical or surgical management (please specify) may benefit from MELD exception points. Indication for an exception include those with PLD with severe symptoms related to PLD plus *any* of the following:

- Hepatic decompensation or severe portal hypertensive complications
- Concurrent hemodialysis
- GFR less than 20 ml/min
- Candidate with a prior kidney transplant
- Moderate to severe protein calorie malnutrition as documented by a registered dietician using any of the following:
  - Modified Global Leadership Initiative on Malnutrition (GLIM) Phenotypic criteria
  - American Society for Enteral and Parenteral Nutrition (ASPEN) criteria
  - Nutrition Focused Physical Exam (NFPE)
  - Subjective Global Assessment (SGA-C score)

[23] Lee, M., D.Y. Sze, C.A. Bonham, et al. "Hepatic arteriovenous malformations from hereditary hemorrhagic telangiectasia: treatment with liver transplantation." Dig Dis Sci 55 (2010): 3059-62.
[24] Boillot, O., F. Bianco, J.P. Viale, et al. "Liver transplantation resolves the hyperdynamic circulation in hereditary hemorrhagic telangiectasia with hepatic involvement." Gastroenterology 116 (1999): 187-92.

- Severe sarcopenia as documented with skeletal muscle index (SMI less than 39 cm^2/m^2 in women and less than 50 cm^2/m^2 in men)[25] or equivalent

Candidates meeting the criteria described above should be considered for a MELD exception score equal to MMaT.

Primary Sclerosing Cholangitis or Secondary Sclerosing Cholangitis

Candidates with Primary Sclerosing Cholangitis (PSC) or Secondary Sclerosing Cholangitis (SSC) may be at risk of adverse outcomes secondary to recurrent sepsis from cholangitis, which may not be reflected in the candidate's calculated MELD score.

Based on clinical experience and a review of the available literature, transplant programs should provide the following elements when submitting exceptions for PSC or SSC and the review board should consider the following elements when reviewing exception applications for candidates with PSC or SSC.

Candidates who meet the following criteria should be considered for a MELD exception equal to MMaT-3:

- The candidate has been admitted to the hospital two or more times within a one-year period with either of the following:
  - Documented blood stream infection
  - Evidence of sepsis with hemodynamic instability requiring vasopressors

In addition, candidates should be considered for a MELD exception score equal to MMaT if they meet at least two of following criteria:

- The candidate has a biliary tract stricture(s) which are not responsive to treatment by interventional radiology (i.e. PTC) or therapeutic endoscopy (ERCP/EUS).
- The candidate has been diagnosed with a high-resistant infectious organism (e.g. Vancomycin Resistant Enterococcus (VRE), Extended Spectrum Beta-Lactamase (ESBL) producing gram-negative organism, Carbapenem-resistant Enterobacteriaceae (CRE) and Multi-drug resistant Acinetobacter).
- The candidate has cirrhosis.

Metabolic Disease

Adults who develop metabolic symptoms secondary to an inherited organic acidemia or urea cycle defect which are typically transplanted during infancy or childhood may be suitable for MELD exception. A later onset of metabolic disease may present with mild symptoms and require a MELD exception score equal to MMaT-3. Candidates who present with life-threatening complications of metabolic disease may be considered for a higher exception score.

[25] Carey, Elizabeth J., Jennifer C. Lai, Connie W. Wang, Srinivasan Dasarathy, Iryna Lobach, Aldo J. Montano-Loza, and Michael A. Dunn. "A Multicenter Study to Define Sarcopenia in Patients with End-Stage Liver Disease." Liver Transplantation 23, no. 5 (2017): 625–33. https://doi.org/10.1002/lt.24750.

Multivisceral Transplant Candidates

Multivisceral transplant (MVT) candidates are typically listed for the following organ combinations:

- Liver-intestine-pancreas
- Liver-intestine
- Liver-intestine-pancreas-kidney
- Liver-intestine-kidney

Because MVT candidates require multiple organs from the same donor, these candidates require access to a selective segment of the donor pool. Specifically, for intestine grafts, donors must typically meet the following criteria:

- Donor age less than 40 years old
- Donor should not be on high dose or multiple vasopressors, as this could cause intestine ischemia and dysfunction

For pancreas grafts, donors must typically meet the following criteria:

- Donor body mass index (BMI) should not be high (ideally less than 30)
- Donor should not have pancreatitis or a history of diabetes.

The liver grafts from donors meeting these criteria are often allocated to liver-alone candidates with high MELD or PELD scores before being allocated to MVT candidates. It should be acknowledged that the MELD exception for MVT candidates is not well established. However, candidates listed for a multivisceral transplant should be considered for an initial MELD exception equal to MMaT+6, in order to provide access to suitable donors and avoid waitlist mortality.

Candidates being listed for any liver and kidney multivisceral combination will have already met simultaneous liver-kidney criteria as outlined in OPTN Policy.

Further, MVT candidates should be considered for an additional 3 point increase (e.g. MMaT+9, MMaT+12), every 90 days they remain on the waitlist.

Transplant programs submitting exception requests for MVT candidates should include information on prior exception requests, if applicable. In addition, transplant programs must indicate in the exception narrative the reason the candidate requires a liver and intestine graft with or without a pancreas/kidney. A candidate should not be considered for a MELD exception if the reason he or she requires a liver transplant is solely for immunological reasons.

The following diagnoses are typical indications for multivisceral transplant. This list should be referenced by transplant programs when submitting exceptions for MVT candidates. However, the list should not be considered when determining a candidate's eligibility for a MELD exception. Indications for multivisceral transplant include but are not limited to:

- Intestine failure with liver dysfunction
- Diffuse portomesenteric thrombosis

- Neuroendocrine tumor with liver metastasis
- Unresectable intra-abdominal low-grade malignant tumors involving the liver or hepatic hilum, celiac/SMA trunk
- Catastrophic adhesive disease “Frozen abdomen”

Post-Transplant Complications

Early Allograft Dysfunction (EAD) in Reduced Size Livers (Small for Size Syndrome)

Living donor allografts, split allografts, and reduced size allografts are prone to early allograft dysfunction secondary to elevated portal flow or pressure. Symptoms should develop less than 30 days following transplantation without other identified cause of graft dysfunction such as vascular thrombosis, prolonged ischemia, or other etiology. Typical findings include worsening cholestasis, ascites, and renal insufficiency. Key Risk factors include Graft to Recipient Weight Ratio (GRWR) less than 0.8%, Graft Volume to Standard Liver Volume ration of less than 40%, Portal Pressure greater than 15 mm hg or portal cava gradients greater than 10 mm Hg, and Portal flow greater than 250 ml/min/100 gm graft weight.

Documentation submitted for case review should include the anatomy of the split allograft, identified risk factors for small for size syndrome, and any intraoperative or postoperative interventions used for treatment.

With optimal care, many candidates may recover and in many other cases, the calculated MELD score will provide adequate priority. However, candidates with severe allograft dysfunction (Grade C) defined as Total Bilirubin greater than 10 mg/dl and INR greater than 1.6 at day 7 OR Total Bilirubin greater than 20 at day 14 have excess mortality justifying an exception score equal to MMaT.[26]

Chronic Rejection

There is inadequate evidence to support granting a MELD exception for chronic rejection in adult candidates with the typical clinical symptoms associated with this diagnosis.

In cases where re-transplantation is being considered, it is anticipated that progressive injury of the allograft due to rejection will be reflected in the development of liver dysfunction, and prioritization by MELD score may be appropriate. Cases with atypical clinical scenarios in which the degree of liver dysfunction and risk of waitlist mortality are not reflected by the MELD score may be considered on an individual basis.

Diffuse Ischemic Cholangiopathy

Diffuse ischemic cholangiopathy is a complication associated with significant morbidity and may involve multiple biliary interventions and hospitalizations for cholangitis or life-threatening sepsis. It can result from numerous causes including vascular complications, ischemic injury, or receipt of donation after circulatory death (DCD) livers. Due to the highly variable outcomes associated with late hepatic artery thrombosis, there is inadequate evidence to support granting a MELD exception in adult candidates with the typical clinical symptoms, including hepatic abscess and intrahepatic biliary strictures. However, a subset of cases may experience life-threatening infectious complications or persistent long-term

[26] A. Kow et al. Transplantation. October 2023; Vol. 107:2226-37.

morbidity requiring repeat biliary interventions. These candidates may be considered for a MELD exception.

Documentation for case review should include the following:

1) Risk factor(s) for ischemic cholangiopathy (e.g. hepatic artery thrombosis post-transplant or DCD donor characteristics)
2) Evidence of ischemic cholangiopathy and non-anastomotic biliary stricture, including two or more of the following criteria within 12 months of transplant:
    - Persistent cholestasis as defined by abnormal bilirubin (greater than 2 mg/dl) for greater than 4 weeks
    - Evidence of severe infection, such as:
        - Two or more episodes of cholangitis with an associated bacteremia requiring hospital admission.
        - Repeated multidrug-resistant bacteremia
        - Abscesses and/or biliary strictures requiring frequent interventions (e.g. PTBD, ERCP) requiring at least two documented readmissions over 6 months.

Candidates meeting the criteria described above should be considered for a MELD exception score equal to MMaT-3.

Pruritus

There is inadequate evidence to support granting a MELD exception for pruritus in adult candidates with the typical clinical symptoms associated with this diagnosis. Pruritus is a manifestation of predominantly cholestatic liver diseases. It had been reported that chronic pruritus may lead to a decreased quality of life, prolonged wound healing, skin infections, and sleep disturbance.[27] The frequency ranges from 80-100% for patients suffering from Primary Biliary Cirrhosis; 20-40% for patients with primary Sclerosing Cholangitis and Chronic Viral Hepatitis among other diseases.[28] The pruritus increases as the disease is progresses. So far data have failed to support an endpoint related to quantity but rather of quality of life and were considered inappropriate for additional MELD points.[29] Due to inadequate evidence of increased risk of pre-transplant mortality, or a widely-accepted threshold for access to liver transplant, MELD score exception for isolated clinical finding of pruritus is not recommended.

Conclusion

Review board members should consult this resource when assessing adult MELD exception requests. Liver programs should also consider this guidance when submitting exception requests for adult candidates with these diagnoses. However, these guidelines are not prescriptive of clinical practice.

[27]Pruritus in chronic cholestatic liver disease. Bunchorntavakul C, Reddy KR Clin Liver Dis. 2012 May;16(2):331-46.
[28]Elman, S., L.S. Hynan, V. Gabriel, et al. "The 5-D itch scale: a new measure of pruritus." Br J Dermatol 162 (2010): 587-93
[29]Martin, P., A. DiMartini, S. Feng, et al. "Evaluation for liver transplantation in adults: 2013 practice guideline by the AASLD and the American Society of Transplantation." (2013): 61.