

Transplant Hepatology

Certification Examination Blueprint

Purpose of the exam

The exam is designed to evaluate the knowledge, diagnostic reasoning, and clinical judgment skills expected of the certified transplant hepatologist in the broad domain of the discipline. The ability to make appropriate diagnostic and management decisions that have important consequences for patients will be assessed. The exam may require recognition of common as well as rare clinical problems for which patients may consult a certified transplant hepatologist.

The exam is developed jointly by the ABIM and the American Board of Pediatrics. All candidates will see 180 common questions. ABIM candidates will see 60 additional questions specific to adult content areas; American Board of Pediatrics candidates will see 60 additional questions specific to Pediatric content areas. The following blueprint is used for determining the full exam for each of the two groups of examinees.

Exam content

Exam content is determined by a pre-established blueprint, or table of specifications, which is reviewed annually and updated as needed for currency. Trainees, training program directors, and certified practitioners in the discipline are surveyed periodically to provide feedback and inform the blueprinting process.

The primary medical content categories of the blueprint are shown below, with the percentage assigned to each for a typical exam:

Medical Content Category	% of Exam
Pretransplant	45%
Perioperative	20%
Post-transplant	25%
Transplant Immunology	5%
Miscellaneous	5%
	100%

Exam format

The exam is composed of multiple-choice questions with a single best answer, predominantly describing patient scenarios. Questions ask about the work done (that is, tasks performed) by physicians in the course of practice:

- Making a diagnosis
- Ordering and interpreting results of tests
- Recommending treatment or other patient care
- Assessing risk, determining prognosis, and applying principles from epidemiologic studies
- Understanding the underlying pathophysiology of disease and basic science knowledge applicable to patient care

Clinical information presented may include patient photographs, radiographs, electrocardiograms, recordings of heart or lung sounds, and other media to illustrate relevant patient findings.

A tutorial including examples of ABIM exam question format can be found at <http://www.abim.org/certification/exam-information/transplant-hepatology/exam-tutorial.aspx>.

The blueprint can be expanded for additional detail as shown below. Each of the medical content categories is listed there, and below each major category are the content subsections and specific topics that *may* appear in the exam. Please note: actual exam content may vary.

Pretransplant	45% of Exam
Biliary atresia (pediatrics only)	2%
Genetic liver disease	4%
Cholestatic syndromes (including progressive familial intrahepatic cholestasis [PFICs])	
Hereditary hemorrhagic telangiectasia (internal medicine only)	
Wilson disease	
Alpha-1-antitrypsin deficiency	
Iron overload syndromes	
Mitochondrial defect	
Urea cycle defect (pediatrics only)	
Cystic fibrosis	
Fibrocystic diseases (including Caroli disease and choledochal cysts)	

Familial amyloid polyneuropathy (FAP) (internal medicine only)	
Other genetic liver diseases (including EPP)	
Autoimmune disorders	3%
Primary biliary cholangitis (internal medicine only)	
Hepatitis	
Overlap syndrome (including autoimmune cholangiopathy)	
Primary sclerosing cholangitis (including IgG4 cholangiopathy)	
Sarcoidosis (internal medicine only)	
Celiac disease	
Viral hepatitis	7%
Hepatitis A (HAV)	
Hepatitis B (HBV)	
Hepatitis C (HCV)	
Hepatitis D (HDV)	
Hepatitis E (HEV)	
Other viruses (including EBV, CMV, HSV)	
Budd-Chiari syndrome, veno-occlusive disease, and congestive hepatopathy	<2%
Growth failure (pediatrics only)	2%
Portal hypertension	2%
Varices	
Ascites	
Encephalopathy	
Spontaneous bacterial peritonitis	
Noncirrhotic portal hypertension	
Hepatic hydrothorax	
Hepatopulmonary syndrome and portopulmonary hypertension	
Hepatorenal syndrome	
Liver tumors	4%
Hepatocellular carcinoma	
Hepatoblastoma (pediatrics only)	
Cholangiocarcinoma (internal medicine only)	
Other tumors (including benign, hemangioendothelioma, and neuroendocrine)	
Selection and evaluation for transplantation	9%
Pediatric End-Stage Liver Disease (PELD) and Model for End-Stage Liver Disease (MELD) scoring systems, including psychosocial issues	
Contraindications to transplantation	
Exceptions to PELD and MELD systems	
Live donor selection	

Impact of active infection, malignancy, and malnutrition on outcome	
Multiorgan (liver, kidney) recipients	
Co-morbidities (including human immunodeficiency virus [HIV] infection)	
Acute liver failure	5%
Epidemiology	
Etiology	
Pathobiology	
Assessment	
Prognostic indicators	
Treatment	
Indications for transplantation	
Outcome as a function of age and diagnosis	
Alcoholic liver disease (internal medicine only)	2%
Nonalcoholic fatty liver disease	<2%
Liver diseases of pregnancy	<2%
Transfer of care	<2%
Drug-induced liver disease	<2%

Perioperative	20% of Exam
Donor selection	3%
Extended-criteria donors	
Steatosis	
Viral infection	
Domino liver transplantation (internal medicine only)	
Surgical options, complications specific to graft and donor types (including ABO blood type)	3%
Perioperative complications	6%
Initial poor function or primary nonfunction	
Vascular complications	
Infections (viral, bacterial, and fungal)	
Hepatitis B and C antiviral therapy	
Biliary complications	
Allograft rejection	
Metabolic complications (including neurotoxicity and nephrotoxicity)	
Drug hepatotoxicity	2%
Nutritional support	2%

Living donor	<2%
Small for size syndrome	
Donor complications	
Recipient complications	
Donor transmission of disease	<2%
Donation after cardiac death	<2%
Split graft transplantation	<2%

Post-transplant	25% of Exam
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Immune complications	4%
Rejection	
Graft-versus-host disease	
Alloimmune and autoimmune diseases (de novo)	
Nonimmune complications	5%
Diabetes mellitus	
Renal	
Bone	
Growth and development (pediatrics only)	
Cardiovascular complications	
Vascular complications	
Infectious complications	5%
Viral infections (cytomegalovirus, Epstein-Barr virus, and human herpesvirus)	
Bacterial infections	
Fungal infections	
Emerging infections	
Recurrence of disease (including hepatitis C, cancer, PBC, AIH)	3%
Post-transplant malignancy	2%
Post-transplantation lymphoproliferative disease (PTLD)	
Surveillance for malignancy	
Indications for retransplantation	2%
Adherence to medical regimen	2%
Quality of life	2%

Transplant Immunology	5% of Exam
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Basic immunology	2%
Innate and adaptive immune system	
Immune response	
Tolerance	

Mechanism of action and pharmacokinetics (PK) of immunosuppressive medications	2%
Cyclosporine and tacrolimus	
Mycophenolate mofetil (MMF), mycophenolic acid (MPA), and azathioprine	
Sirolimus and everolimus	
Antibody therapy	
Drug-drug interactions	
Corticosteroids	
Short-term immune and nonimmune toxicity of immunosuppressive medications	<2%

Miscellaneous	5% of Exam
Statistics	2%
Kaplan-Meier (KM)	
Cox proportional hazards	
Relative risk	
Odds ratio	
Receiver operating characteristic curves	
Ethics	2%
Psychosocial evaluation	
Living donor transplantation	
Transplant tourism	
Clinical trial participation	
Managed care and reimbursement issues	<2%
Regulatory issues	<2%
Policy implications of organ shortage	
Regulation	

January 2021