American Board of Internal Medicine®

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%
Total	100%

The blueprint can be expanded for additional detail as shown below. Each primary medical content category is listed again, with the *percentage of the exam* devoted to this content area. Below each major category are the content subsections and their *percentages within the exam*. Please note: The percentages for each subsection describe content of a *typical* exam and are approximate; actual exam content may vary.

Pretransplant 45% of Exam	Approximate % of Exam
Biliary atresia (pediatric)	**2%**
Genetic liver disease – which may include: Cholestatic syndromes (Incl. PFICs) HHT (IM only) Wilson Alpha-1 antitrypsin deficiency Iron overload syndromes Mitochondrial defect Urea cycle defect (Pediatrics only) Cystic fibrosis Fibrocystic diseases FAP	**4%**
Autoimmune disorders – which may include: Primary biliary cirrhosis (IM only) Hepatitis Overlap syndrome Primary sclerosing cholangitis Sarcoidosis Celiac disease	**3%**
Viral hepatitis – which may include: HAV HBV HCV HDV HEV	**8%**
Budd-Chiari, veno-occlusive disease, and cardiac cirrhosis	**<2%**
Growth failure (Pediatric only)	**2%**
Portal hypertension – which may include: Varices Ascites Encephalopathy Spontaneous bacterial peritonitis Non-cirrhotic portal hypertension Hepatic hydrothorax Hepatopulmonary syndrome and portopulmonary hypertension Hepatorenal syndrome	**2%**
Liver tumors/masses – which may include: Hepatocellular carcinoma Hepatoblastoma (pediatrics) Cholangiocarcinoma (IM only)	**4%**
Selection for transplantation/evaluation – which may include: PELD/MELD (including psychosocial issues) Contraindications to transplantation Exceptions to PELD/MELD system Live donor selection	**9%**

Impact of active infection, malignancy, malnutrition on outcome Multi-organ (liver/kidney) recipients Co-morbidities (including HIV)	
Acute liver failure – which may include: Epidemiology Etiology Pathobiology Assessment Prognostic indicators Treatment Indications for transplantation Outcome as a function of age and diagnosis	**6%**
Alcoholic liver disease (IM only)	**2%**
Nonalcoholic fatty liver disease (NAFLD)	**<2%**
Liver diseases of pregnancy	**<2%**
Transfer of care	**<2%**
Drug-induced liver disease	**<2%**

Perioperative 20% of Exam	**Approximate % of Exam**
Donor selection– which may include: Extended criteria donors Steatosis Viral infection Domino Auxiliary transplantation	**3%**
Surgical options, complications specific to graft/donor type (including ABO)	**4%**
Perioperative complications – which may include: Initial poor function or primary non-function Vascular complications Infection (viral, bacterial, fungal) Hepatitis B/C antiviral therapy Biliary complications Allograft rejection Metabolic complications (including neurotoxicity, nephrotoxicity)	**6%**
Drug hepatotoxicity	**3%**
Nutritional support	**3%**
Living donor – which may include: Small for size syndrome Donor complications Recipient complications	**<2%**
Donor transmission of disease	**<2%**
Donation after cardiac death	**<2%**
Split graft transplantation	**<2%**

Post-transplant 25% of Exam	Approximate % of Exam
Immune complications – which may include: Rejection Graft vs. host disease Allo- and autoimmune diseases (de novo)	**4%**
Non-immune complications – which may include: Diabetes Renal Bone Growth and development Cardiovascular complications Vascular complications	**5%**
Infectious complications – which may include: Viral infections (CMV, EBV, HHV) Bacterial infections Fungal infections	**5%**
Recurrence of disease (including hepatitis C, cancer, PBC, AIH)	**3%**
Post transplant malignancy – which may include: PTLD Surveillance for malignancy	**2%**
Indications for retransplantation	**2%**
Adherence to medical regimen	**2%**
Quality of life	**2%**

Transplant Immunology 5% of Exam	Approximate % of Exam
Basic immunology – which may include: Innate and adaptive immune system Immune response Tolerance	**2%**
Mechanism of action and PK of immunosuppressive medications – which may include: Cyclosporine/Tacrolimus MMF/MPA Sirolimus/Everolimus Antibody therapy	**2%**
Short-term immune and non-immune toxicity of immunosuppressive medications items	**<2%**

Miscellaneous 5% of Exam	Approximate % of Exam
Statistics – which may include: KM Cox proportional hazard Relative risk	**2%**
Ethics – which may include: Policy implications of organ shortage Psychosocial evaluation Living donor transplantation Transplant tourism Clinical trial participation	**2%**
Managed care/reimbursement issues	**<2%**
Regulatory issues	**<2%**
Communication/Professionalism	**<2%**

Exam format

The exam is composed of single-best-answer multiple-choice questions, predominantly describing patient scenarios that occur in practice settings. Clinical information presented may include various media illustrating relevant findings, such as diagnostic imaging studies. Questions pose tasks such as the following:

- making a diagnosis
- determining a treatment or management plan
- ordering diagnostic tests
- recognizing clinical features of a disease
- determining means of prevention, screening, staging, or follow-up

Exam tutorial

A tutorial including examples of ABIM exam question format can be found at http://www.abim.org/exam/prepare.aspx.

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