Purpose of the exam

The exam is designed to evaluate the knowledge, diagnostic reasoning, and clinical judgment skills expected of the certified advanced heart failure and transplant cardiology specialist 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 specialist in advanced heart failure and transplant cardiology.

Exam content

Exam content is determined by a pre-established blueprint, or table of specifications. The blueprint is developed by ABIM and 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:

<table>
<thead>
<tr>
<th>Medical Content Category</th>
<th>% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Failure</td>
<td>50%</td>
</tr>
<tr>
<td>Mechanical Circulatory Support</td>
<td>22.5%</td>
</tr>
<tr>
<td>Heart Transplantation</td>
<td>22.5%</td>
</tr>
<tr>
<td>Pulmonary Hypertension</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Exam questions in the content areas above may also address clinical topics in general internal medicine that are relevant to the practice of advanced heart failure and transplant cardiology.
ABIM is committed to working toward health equity and believes that board-certified physicians should have an understanding of health care disparities. Therefore, health equity content that is clinically important to each discipline will be included in assessments, and the use of gender, race, and ethnicity identifiers will be re-evaluated.

**Exam format**

The exam is composed of up to 240 single-best-answer multiple-choice questions, of which approximately 40 are new questions that do not count in the examinee’s score. Most questions describe patient scenarios and 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

Some questions require interpretation of pictorial material, such as coronary angiograms, ultrasound images, computed tomograms, magnetic resonance images, electrocardiograms, and echocardiograms. [Learn more information on how exams are developed.](http://www.abim.org/certification/exam-information/advanced-heart-failure-transplant-cardiology/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.

<table>
<thead>
<tr>
<th>Heart Failure</th>
<th>50% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
<td>10%</td>
</tr>
<tr>
<td>New-onset</td>
<td></td>
</tr>
<tr>
<td>Hemodynamics</td>
<td></td>
</tr>
<tr>
<td>Decompensated</td>
<td></td>
</tr>
<tr>
<td>Shock</td>
<td></td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
</tr>
</tbody>
</table>
Heart failure with reduced ejection fraction (HFrEF) 15%
  Stage B
  Stage C
  Stage D
  Comorbidities
  Palliative and transitional care
Heart failure with preserved ejection fraction (HFpEF) 7.5%
  Stage B
  Stage C
  Stage D
  Comorbidities
  Palliative and transitional care
Specific etiologies of heart failure 17.5%
  Adult congenital heart disease
  Arrhythmia-related
  Inherited cardiomyopathy
  Hypertension
  Hypertrophic cardiomyopathy
  Infiltrative cardiomyopathy
  Inflammation and infection
  Coronary artery disease and acute myocardial infarction
  Non-ischemic cardiomyopathy
  Pericardial disease
  Peripartum cardiomyopathy
  Toxic cardiomyopathy including chemotherapy
  Valvular heart disease

Mechanical Circulatory Support 22.5% of Exam

Patient selection 6.5%
  Timing of referral
  Comorbidities
  Psychosocial circumstances
  Hemodynamics
Temporary circulatory assist devices 5%
  Percutaneous
  Surgical
  Extracorporeal membrane oxygenation
  Palliative and transitional care
### Durable left ventricular assist devices

<table>
<thead>
<tr>
<th>Device</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbott HeartMate 3&lt;sup&gt;TM&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Medtronic HVAD ®</td>
<td></td>
</tr>
</tbody>
</table>

### Palliative and Transitional care

**Total artificial heart**

<2%

### Heart Transplantation 22.5% of Exam

#### Patient selection

- Timing of referral
- Consent process
- Comorbidities
- Psychosocial circumstances
- Hemodynamics
- Combined organ transplantation

<2%

#### Listing criteria

<2%

#### UNOS algorithms

<2%

#### Clinical trials and registries

<2%

#### Transplant immunology

- Histocompatibility
- Allosensitization
- Immune response

<2%

#### Pre-operative considerations

<2%

#### Intra-operative complications

- Primary allograft dysfunction
- Right heart failure
- Indications for acute mechanical support
- Bleeding complications

<2%

#### Early peri-operative complications (< 7 days)

<2%

#### Late peri-operative complications (7 – 28 days)

<2%

#### Immunosuppression

- Mechanisms of actions
- Adverse reactions
- Drug-drug interactions
- Protocols
- Vaccinations in transplant recipient

2%

#### Acute allograft rejection

- Hyperacute
- Acute cellular
- Antibody-mediated rejection

2%
Chronic allograft rejection  <2%
    Allograft vasculopathy

Retransplantation  <2%
    Patient selection
    Timing
    Complications

Post-transplantation considerations  4%
    Diabetes mellitus
    Gastrointestinal complications
    Hypertension
    Infection
    Malignancy
    Metabolic disorders
    Palliative and transitional care
    Pregnancy
    Psychosocial circumstances
    Rehabilitation
    Renal dysfunction

<table>
<thead>
<tr>
<th>Pulmonary Hypertension</th>
<th>5% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO Group 1 – Pulmonary arterial hypertension (PAH)</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>WHO Group 2 – Pulmonary hypertension owing to left heart disease</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>WHO Group 3 – Pulmonary hypertension owing to lung disease</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>WHO Group 4 – Chronic thromboembolic pulmonary hypertension (CTEPH)</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

January 2024