Infectious Disease
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 infectious disease 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 infectious disease specialist.

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>Bacterial Diseases</td>
<td>27%</td>
</tr>
<tr>
<td>Human Immunodeficiency Virus (HIV) Infection</td>
<td>15%</td>
</tr>
<tr>
<td>Antimicrobial Therapy</td>
<td>9%</td>
</tr>
<tr>
<td>Viral Diseases</td>
<td>7%</td>
</tr>
<tr>
<td>Travel and Tropical Medicine</td>
<td>5%</td>
</tr>
<tr>
<td>Fungi</td>
<td>5%</td>
</tr>
<tr>
<td>Immunocompromised Host (Non-HIV Infection)</td>
<td>5%</td>
</tr>
<tr>
<td>Vaccinations</td>
<td>4%</td>
</tr>
<tr>
<td>Infection Prevention and Control</td>
<td>5%</td>
</tr>
<tr>
<td>General Internal Medicine, Critical Care and Surgery</td>
<td>18%</td>
</tr>
</tbody>
</table>

100%
Exam questions in the content areas above may also address clinical topics in clinical syndromes and general internal medicine that are important to the practice of infectious disease.

**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.


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>Bacterial Diseases</th>
<th>27% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gram-positive cocci</strong></td>
<td>4.5%</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td></td>
</tr>
<tr>
<td><em>Streptococcus</em></td>
<td></td>
</tr>
<tr>
<td><em>Enterococcus</em></td>
<td></td>
</tr>
<tr>
<td><strong>Gram-positive rods</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td><em>Listeria</em></td>
<td></td>
</tr>
<tr>
<td><em>Corynebacterium</em></td>
<td></td>
</tr>
<tr>
<td><em>Bacillus</em></td>
<td></td>
</tr>
<tr>
<td><em>Erysipelothrix</em></td>
<td></td>
</tr>
<tr>
<td><strong>Gram-negative cocci and coccobacilli</strong></td>
<td>2%</td>
</tr>
<tr>
<td><em>Neisseria</em></td>
<td></td>
</tr>
</tbody>
</table>
Haemophilus

**Gram-negative rods** 2.5%
- Enterobacteriaceae
- *Pseudomonas*
- *Stenotrophomonas*
- *Burkholderia*
- *Acinetobacter*
- *Aeromonas*
- *Salmonella*
- *Shigella*
- *Campylobacter*
- *Vibrio*
- *Pasteurella*
- *Yersinia*
- *Legionella*
- *Capnocytophaga*
- *Bartonella*
- *Brucella*
- *Bordetella*
- *Streptobacillus*
- *Francisella*
- *Helicobacter*

**Anaerobes** 2.5%
- Gram-positive cocci
- Gram-positive rods
- Gram-negative rods

**Actinomycetes** <2%
- *Actinomyces*
- *Nocardia*

**Spirochetes** <2%
- *Treponema*
- *Borrelia*
- *Leptospira*

**Mycoplasma** <2%
- *M. pneumoniae*
- *M. genitalium*

**Tropheryma whippelii** <2%

**Chlamydia** <2%
- *C. trachomatis*
- *C. pneumoniae*
- *C. psittaci*
**Rickettsia**  
- R. conorii  
- R. akari  
- R. rickettsii  
- R. prowazekii  
- R. typhi  
- Orientia tsutsugamushi  
- R. parkeri  
- R. africae  
- Coxiella burnetii  

**Erlichia**  
- E. chaffeensis  
- E. ewingii  
- Anaplasma phagocytophilum  

**Mycobacterium**  
- M. tuberculosis  
- M. bovis  
- M. lepri  
- Nontuberculous mycobacteria  

**Syndromes characterized by bacterial pathogens**  
- Head and neck  
- Respiratory  
- Gastrointestinal  
- Ophthalmologic  
- Genitourinary  
- Dermatologic (including skin and soft-tissue infections)  
- Musculoskeletal  
- Neurologic  
- Cardiovascular  

---

**Human Immunodeficiency Virus (HIV) Infection**  

**Epidemiology**  
- <2%  
  - Transmission  
  - Testing and counseling  
  - Initial laboratory evaluation  
  - Prevention  

**Pathogenesis**  
- <2%  
  - Virology  
  - Immunopathogenesis  
  - Acute HIV infection
Laboratory testing
  - Diagnostic evaluation
  - Baseline evaluation

HIV treatment regimens
  - Antiretroviral therapy drug classes
  - Adverse effects of treatment
  - Drug-drug interactions
  - When to start therapy
  - Selection of optimal initial regimen
  - Laboratory monitoring
  - Treatment-experienced patients

Opportunistic infections (OIs)
  - Prevention
  - When to start HIV therapy in the context of active OIs
  - Immune reconstitution inflammatory syndrome
  - Bacteria
  - Mycobacteria
  - Fungi
  - Parasites
  - Viruses

Malignancies
  - Kaposis sarcoma
  - Lymphoma
  - Cervical cancer
  - Anal cancer

Other complications of HIV
  - Hematologic
  - Endocrine
  - Gastrointestinal
  - Renal (HIV-associated nephropathy [HIVAN])
  - Cardiac (HIV cardiomyopathy)
  - Pulmonary
  - Head, eye, ear, nose, and throat
  - Musculoskeletal
  - Neurologic
  - Psychiatric
  - Dermatologic

Related issues
  - Substance use
  - Organ transplantation
  - Primary care
Miscellaneous non-HIV-related complications that may occur more commonly in those who have HIV

<table>
<thead>
<tr>
<th>Antimicrobial Therapy</th>
<th>9% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibacterials</strong></td>
<td>5.5%</td>
</tr>
<tr>
<td>Aminoglycosides</td>
<td></td>
</tr>
<tr>
<td>Antifolates</td>
<td></td>
</tr>
<tr>
<td>Carbapenems</td>
<td></td>
</tr>
<tr>
<td>Cephalosporins</td>
<td></td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td></td>
</tr>
<tr>
<td>Fluoroquinolones</td>
<td></td>
</tr>
<tr>
<td>Fusidanes</td>
<td></td>
</tr>
<tr>
<td>Glycopeptides, glycolipopeptides, and lipopeptides</td>
<td></td>
</tr>
<tr>
<td>Lincosamides</td>
<td></td>
</tr>
<tr>
<td>Macrolides</td>
<td></td>
</tr>
<tr>
<td>Monobactams</td>
<td></td>
</tr>
<tr>
<td>Nitroimidazoles</td>
<td></td>
</tr>
<tr>
<td>Oxazolidinones</td>
<td></td>
</tr>
<tr>
<td>Penicillins</td>
<td></td>
</tr>
<tr>
<td>Polymyxins</td>
<td></td>
</tr>
<tr>
<td>Rifamycins</td>
<td></td>
</tr>
<tr>
<td>Streptogramins</td>
<td></td>
</tr>
<tr>
<td>Tetracyclines</td>
<td></td>
</tr>
<tr>
<td>Non-sulfonamide (sulfa drug), non-trimethoprim urinary tract agents</td>
<td></td>
</tr>
<tr>
<td>Topical antibacterials</td>
<td></td>
</tr>
<tr>
<td>Other routes of administration</td>
<td></td>
</tr>
<tr>
<td><strong>Antivirals (non-HIV)</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>For influenza</td>
<td></td>
</tr>
<tr>
<td>For herpes simplex</td>
<td></td>
</tr>
<tr>
<td>For cytomegalovirus</td>
<td></td>
</tr>
<tr>
<td>For hepatitis C and respiratory syncytial virus (RSV)</td>
<td></td>
</tr>
<tr>
<td>For hepatitis B</td>
<td></td>
</tr>
<tr>
<td>Interferon alfa 2a and alfa 2b</td>
<td></td>
</tr>
<tr>
<td>For hepatitis C</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous and topical agents</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacology and outpatient parenteral antimicrobial therapy (OPAT)</strong></td>
<td>2.5%</td>
</tr>
<tr>
<td>Susceptibility testing</td>
<td></td>
</tr>
<tr>
<td>Drug resistance</td>
<td></td>
</tr>
</tbody>
</table>
ADME (absorption, distribution, metabolism, and excretion)
Dosing
Drug interactions
Toxicity
Outpatient parenteral antimicrobial therapy

<table>
<thead>
<tr>
<th>Viral Diseases</th>
<th>7% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DNA viruses</strong></td>
<td>4%</td>
</tr>
<tr>
<td>Herpesviruses</td>
<td></td>
</tr>
<tr>
<td>Adenovirus</td>
<td></td>
</tr>
<tr>
<td>Papillomavirus</td>
<td></td>
</tr>
<tr>
<td>Polyomavirus</td>
<td></td>
</tr>
<tr>
<td>Poxviruses</td>
<td></td>
</tr>
<tr>
<td>Hepadnaviridae</td>
<td></td>
</tr>
<tr>
<td>Parvovirus</td>
<td></td>
</tr>
<tr>
<td><strong>RNA viruses</strong></td>
<td>2.5%</td>
</tr>
<tr>
<td>Reoviridae</td>
<td></td>
</tr>
<tr>
<td>Togaviridae</td>
<td></td>
</tr>
<tr>
<td>Flaviviridae</td>
<td></td>
</tr>
<tr>
<td>Coronaviridae</td>
<td></td>
</tr>
<tr>
<td>Paramyxoviridae</td>
<td></td>
</tr>
<tr>
<td>Rhabdoviridae</td>
<td></td>
</tr>
<tr>
<td>Filoviridae (hemorrhagic fever viruses)</td>
<td></td>
</tr>
<tr>
<td>Orthomyxoviridae (influenza)</td>
<td></td>
</tr>
<tr>
<td>Bunyaviridae</td>
<td></td>
</tr>
<tr>
<td>Arenaviridae</td>
<td></td>
</tr>
<tr>
<td>Non-HIV retroviridae</td>
<td></td>
</tr>
<tr>
<td>Picornaviridae</td>
<td></td>
</tr>
<tr>
<td>Caliciviridae</td>
<td></td>
</tr>
<tr>
<td>Hepatitis E</td>
<td></td>
</tr>
<tr>
<td><strong>Prions</strong></td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Travel and Tropical Medicine</th>
<th>5% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protozoal intestinal infections</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td><em>Balantidium coli</em></td>
<td></td>
</tr>
<tr>
<td><em>Blastocystis hominis</em></td>
<td></td>
</tr>
<tr>
<td><em>Cryptosporidium parvum</em> and <em>C. hominis</em></td>
<td></td>
</tr>
<tr>
<td><em>Cyclospora cayetanensis</em></td>
<td></td>
</tr>
<tr>
<td><em>Cytoisospora belli</em> (formerly <em>Isospora belli</em>)</td>
<td></td>
</tr>
<tr>
<td><em>Dientamoeba fragilis</em></td>
<td></td>
</tr>
<tr>
<td><em>Entamoeba histolytica</em> (amebiasis)</td>
<td></td>
</tr>
</tbody>
</table>
Giardiasis
Microsporidiosis

**Protozoal extraintestinal infections**<2%
- Amebic meningoencephalitis
- Babesiosis
- Leishmaniasis
- Malaria
- Toxoplasmosis
  - *Trichomonas vaginalis*
- Trypanosomiasis (general)

**Nematode intestinal infections**<2%
- Anisakiasis
- *Ascaris lumbricoides* (ascariasis)
- *Capillaria philippinensis* (capillariasis)
- *Enterobius vermicularis* (pinworm)
- Hookworm
- *Strongyloides stercoralis*
- *Trichuris trichiura* (whipworm)

**Nematode extraintestinal infections**<2%
- *Angiostrongylus cantonensis*
- Baylisascarisiasis (raccoon roundworm)
- Cutaneous larva migrans (dog and cat hookworm)
- *Dracunculus medinensis* (Guinea worm)
- Filariasis
- *Gnathostoma spinigerum*
- Toxocariasis
- *Trichinella spiralis* (trichinellosis)

**Cestode infections**<2%
- *Diphyllobothrium latum* (fish tapeworm)
- *Hymenolepis* (dwarf tapeworm)
- *Echinococcus granulosus* (hydatid disease)
- *Echinococcus multilocularis* (alveolar disease)
- *Taenia saginata* (beef tapeworm)
- *Taenia solium* (pork tapeworm; intestinal)

**Trematode infections (flukes)**<2%
- *Clonorchis sinensis* (Chinese liver fluke)
- *Fasciolopsis buski* (intestinal fluke)
- *Fasciola hepatica* and *gigantica* (sheep liver fluke)
- *Paragonimus westermani* (lung fluke)
- Schistosomiasis (general)
Ectoparasitic infections

- Myiasis (human botfly or tumbu fly)
- *Pediculus humanus* (body, head, and pubic lice)
- Tick bites—identification and tick paralysis
- Tungiasis (*Tunga penetrans*)
- Bed bugs

General principles of travel medicine

- Pretravel preparation
- Post-travel illness
- Immigrants, refugees, and adoptees
- Travelers with specific needs

### Fungi

#### Yeasts

- *Candida*
- *Cryptococcus*
- Other yeasts (including *Trichosporon* and *Saccharomyces*)

#### Endemic mycoses

- *Histoplasma*
- *Blastomyces dermatitidis*
- *Coccidioides immitis* (*C. posadasii*)
- *Sporothrix schenckii*
- *Paracoccidioides brasiliensis*
- *Penicillium marneffei*

#### Molds

- *Aspergillus*
- Hyaline molds
- Agents of zygomycosis (mucormycosis)
- Dematiaceous molds (*Bipolaris, Exophila*, and others)

#### Superficial and subcutaneous mycoses

- Mycetoma
- Chromoblastomycosis
- *Malassezia*
- Dermatophytes

#### *Pneumocystis jiroveci* pneumonia (PJP)

#### Therapy

- Pharmacokinetics
- Drug interactions
- Spectrum
- Toxicity
- Prophylaxis
Susceptibility testing
Drug resistance

**Diagnostic testing**  
<2%  
Histopathology  
Culture  
Nonculture methods

**Syndromes**  
<2%  
Mucosal  
Skin  
Pulmonary  
Central nervous system and eyes  
Cardiac  
Disseminated

<table>
<thead>
<tr>
<th>Immunocompromised Host (Non-HIV Infection)</th>
<th>5% of Exam</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Primary immunodeficiency</th>
<th>&lt;2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomic lesions</td>
<td></td>
</tr>
<tr>
<td>Lymphocyte defects</td>
<td></td>
</tr>
<tr>
<td>Combined immunodeficiency syndromes (including severe combined immunodeficiency [SCID])</td>
<td></td>
</tr>
<tr>
<td>Phagocytes</td>
<td></td>
</tr>
<tr>
<td>Complement deficiencies</td>
<td></td>
</tr>
<tr>
<td>NK cell deficiencies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hematologic malignancies and stem cell transplantation</th>
<th>&lt;2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections associated with chemotherapy-induced neutropenia</td>
<td></td>
</tr>
<tr>
<td>Stem cell transplant</td>
<td></td>
</tr>
<tr>
<td>Syndromes</td>
<td></td>
</tr>
<tr>
<td>Noninfectious conditions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solid-organ transplantation</th>
<th>&lt;2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donor-derived infections</td>
<td></td>
</tr>
<tr>
<td>Surgical site infections</td>
<td></td>
</tr>
<tr>
<td>Hospital-acquired infection</td>
<td></td>
</tr>
<tr>
<td>Opportunistic infections</td>
<td></td>
</tr>
<tr>
<td>Noninfectious conditions</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complications of immunosuppression in non-transplant population (disease-modifying agents, including tumor necrosis factor [TNF] blockers, corticosteroids)</th>
<th>&lt;2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria</td>
<td></td>
</tr>
<tr>
<td>Fungi</td>
<td></td>
</tr>
<tr>
<td>Viruses</td>
<td></td>
</tr>
<tr>
<td>Parasites and protozoa</td>
<td></td>
</tr>
</tbody>
</table>
Infection prevention in the immunosuppressed host  <2%
  Immunizations
  Antimicrobials
  Environmental control

### Vaccinations  4% of Exam

**Active immunizations (vaccines)**  3%
- Pneumococcal
- Influenza
- Tetanus, diphtheria, and acellular pertussis
  *Haemophilus influenzae*
- Hepatitis B
- Hepatitis A
- Measles, mumps, and rubella
- Polio
- Meningococcal
- Smallpox
- Rabies
- Varicella
- Herpes zoster
- Human papillomavirus (HPV)
- Anthrax

**Passive immunizations**  <2%
- Varicella-zoster virus
- Rabies
- Hepatitis B
- Tetanus
- Immune globulin
- Other (including cytomegalovirus immune globulin)

### Infection Prevention and Control  5% of Exam

**Applied epidemiology and biostatistics**  <2%
- Outbreak investigation
- Healthcare quality improvement

**Healthcare-associated infections (HAIs) of organ systems**  <2%
- HAIs related to intravascular devices,
  short-term and long-term (including contaminated infusions)
- HA urinary tract infections and pneumonia infections
- HA surgical site infections
- HAIs of other organ systems (including gastrointestinal
  tract infections, and central nervous system infections)
Epidemiology and prevention of HAIs caused by specific pathogens  <2%
  Bacterial infections
  Mycobacterial and fungal infections
  Viral infections

Epidemiology and prevention of HAIs in special patient populations  <2%
  HAIs in obstetrics
  HAIs in neoplastic diseases
  HAIs in organ transplant and hematopoietic stem cell transplant

Epidemiology and prevention of HAIs in therapeutic procedures  <2%
  Infection risks of endoscopy
  HAIs associated with hemodialysis and peritoneal dialysis
  HAIs related to other procedures (including cardiology and respiratory therapy)
  HAIs following transfusion of blood and blood products
  Fecal transplantation

Prevention of HAIs related to hospital support services  <2%
  Environmental services
  Disinfection and sterilization

Epidemiology and prevention of HAIs in healthcare workers  <2%
  Prevention of occupationally acquired viral hepatitis in healthcare workers
  Prevention of occupationally acquired HIV infection in healthcare workers
  Vaccination of healthcare workers
  Prevention of occupationally acquired diseases of healthcare workers spread by contact, droplet, or airborne precautions (other than TB, and including diagnostic laboratories)

Organization and implementation of infection control programs  <2%
  Surveillance of HAIs
  Isolation precautions
  Hand antisepsis
  Epidemiology and prevention of infections in residents of long-term care facilities
  Infection control in countries with limited resources

General Internal Medicine, Critical Care and Surgery  18% of Exam

General internal medicine  7.5%
  Malignancies
  Hemophagocytic syndrome
  Collagen vascular and autoimmune disorders
  Dermatologic disorders
Hematologic disorders
Noninfectious central nervous system disease
Bites, stings, and toxins
Drug fever
Ethical and legal decision making

**Surgical infections**
- Orthopedic
- Neurosurgery
- Ear, nose, and throat
- General surgery and intra-abdominal
- Thoracic and cardiothoracic
- Urologic
- Obstetric and gynecologic
- Plastic and reconstructive
- Vascular

**Critical care medicine**
- Systemic inflammatory response syndrome (SIRS) and sepsis
- Ventilator-associated pneumonias
- Noninfectious pneumonias (eosinophilic and acute respiratory distress syndrome [ARDS])
- Bacterial pneumonias
- Viral pneumonias
- Hyperthermia and hypothermia
- Near-drowning and *Scedosporium* and *Pseudallescheria* infection

January, 2018