

## 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:

Medical Content Category	% of Exam
Bacterial Diseases	27%
Human Immunodeficiency Virus (HIV) Infection	15%
Antimicrobial Therapy	9%
Viral Diseases	7%
Travel and Tropical Medicine	5%
Fungi	5%
Immunocompromised Host (Non-HIV Infection)	5%
Vaccinations	4%
Infection Prevention and Control	5%
Internal Medicine and Non-Infectious Syndromes	18%
	100%

## **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

Clinical information presented may include patient photographs, radiographs, electrocardiograms, recordings of heart or lung sounds, and other media to illustrate relevant patient findings. [Learn more information on how exams are developed.](#)

A tutorial including examples of ABIM exam question format can be found at <http://www.abim.org/certification/exam-information/infectious-disease/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. The inherent complexity of the field of infectious disease leads to considerable overlap in content categories, and each question can only be assigned to a single blueprint topic. Thus, a question addressing the cause of fever and rash likely would be classified under the specific organism, while a similar question addressing the treatment of that same illness would be classified under the antimicrobial agent used.

Please note: actual exam content may vary.

**Gram-positive cocci**

*Staphylococcus aureus*

*Streptococcus*

*Enterococcus*

**Gram-positive rods**

*Listeria*

*Corynebacterium*

*Bacillus*

*Erysipelothrix*

**Gram-negative cocci and coccobacilli**

*Neisseria*

*Haemophilus*

**Gram-negative rods**

Enterobacteriaceae

*Pseudomonas*

*Stenotrophomonas*

*Burkholderia*

*Acinetobacter*

*Aeromonas*

*Salmonella*

*Shigella*

*Campylobacter*

*Vibrio*

*Pasteurella*

*Yersinia*

*Legionella*

*Capnocytophaga*

*Bartonella*

*Brucella*

*Bordetella*

*Streptobacillus*

*Francisella*

*Helicobacter*

**Anaerobes**

Gram-positive cocci

Gram-positive rods

Gram-negative rods

**Actinomycetes**

*Actinomyces*

*Nocardia*

## **Spirochetes**

*Treponema*

*Borrelia*

*Leptospira*

## **Mycoplasma**

*M. pneumoniae*

*M. genitalium*

## **Tropheryma whipplei**

## **Chlamydia**

*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*

## **Ehrlichia**

*E. chaffeensis*

*E. ewingii*

*Anaplasma phagocytophilum*

## **Mycobacterium**

*M. tuberculosis*

*M. bovis*

*M. leprae*

Nontuberculous mycobacteria

## **Syndromes characterized by bacterial pathogens**

Head and neck

Respiratory

Gastrointestinal

Ophthalmologic

Genitourinary

Dermatologic (including skin and soft-tissue infections)

Musculoskeletal

Neurologic

Cardiovascular

**Epidemiology**

- Transmission
- Testing and counseling
- Initial laboratory evaluation
- Prevention

**Pathogenesis**

- 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**

- Kaposi 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  
Pregnancy

**Antimicrobial Therapy**

**9%** of Exam

**Antibacterials**

Aminoglycosides  
Antifolates  
Carbapenems  
Cephalosporins  
Fluoroquinolones  
Glycopeptides, glycolipopeptides, and lipopeptides  
Lincosamides  
Macrolides  
Monobactams  
Nitroimidazoles  
Oxazolidinones  
Penicillins  
Polymyxins  
Rifamycins  
Tetracyclines  
Non-sulfonamide (sulfa drug), non-trimethoprim  
urinary tract agents  
Pleuromutilins (e.g., lefamulin)  
Topical antibacterials  
Other routes of administration

**Antivirals (non-HIV)**

For influenza  
For herpes simplex  
For cytomegalovirus  
For hepatitis C and respiratory syncytial virus (RSV)

For hepatitis B  
Interferon alfa 2a and alfa 2b  
For hepatitis C

**Pharmacology and outpatient parenteral antimicrobial therapy (OPAT)**

Susceptibility testing  
Drug resistance  
ADME (absorption, distribution, metabolism, and excretion)  
Dosing  
Drug interactions  
Toxicity  
Outpatient parenteral antimicrobial therapy

**Viral Diseases**

**7%** of Exam

**DNA viruses**

Herpesviruses  
Adenovirus  
Papillomavirus  
Polyomavirus  
Poxviruses  
Hepadnaviridae  
Parvovirus

**RNA viruses**

Reoviridae (e.g., rotavirus)  
Togaviridae (e.g., chikungunya)  
Flaviviridae  
Coronaviridae  
Paramyxoviridae  
Rhabdoviridae  
Filoviridae (hemorrhagic fever viruses)  
Orthomyxoviridae (influenza)  
Bunyaviridae (e.g., Rift Valley fever, Crimean-Congo hemorrhagic fever,  
    Sin Nombre virus)  
Arenaviridae (e.g., lymphocytic choriomeningitis virus)  
Non-HIV retroviridae  
Picornaviridae  
Calciviridae  
Hepatitis E

**Prions**

**Protozoal intestinal infections**

*Balantidium coli*  
*Blastocystis hominis*  
*Cryptosporidium parvum* and *C. hominis*  
*Cyclospora cayetanensis*  
*Cystoisospora (Isospora) belli*  
*Dientamoeba fragilis*  
*Entamoeba histolytica* (amebiasis)  
Giardiasis  
Microsporidiosis

**Protozoal extraintestinal infections**

Amebic meningoencephalitis  
Babesiosis  
Leishmaniasis  
Malaria  
Toxoplasmosis  
*Trichomonas vaginalis*  
Trypanosomiasis (general)

**Nematode intestinal infections**

Anisakiasis  
*Ascaris lumbricoides* (ascariasis)  
*Capillaria philippinesis* (capillariasis)  
*Enterobius vermicularis* (pinworm)  
Hookworm  
*Strongyloides stercoralis*  
*Trichuris trichiura* (whipworm)

**Nematode extraintestinal infections**

*Angiostrongylus cantonensis*  
Bayliascariasis (raccoon roundworm)  
Cutaneous larva migrans (dog and cat hookworm)  
*Dracunculus medinensis* (Guinea worm)  
Filariasis  
*Gnathostoma spinigerum*  
Toxocariasis  
*Trichinella spiralis* (trichinellosis)

**Cestode infections**

*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)**

*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**

**5%** of Exam

### **Yeasts**

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

### **Endemic mycoses**

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

### **Molds**

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

### **Superficial and subcutaneous mycoses**

Mycetoma  
Chromoblastomycosis  
*Malassezia*

Dermatophytes

***Pneumocystis jirovecii* pneumonia (PJP)**

**Therapy**

Agents

Pharmacokinetics

Drug interactions

Spectrum

Toxicity

Prophylaxis

Susceptibility testing

Drug resistance

**Diagnostic testing**

Histopathology

Culture

Nonculture methods

**Syndromes**

Mucosal

Skin

Pulmonary

Central nervous system and eyes

Cardiac

Disseminated

**Immunocompromised Host (Non-HIV Infection)**

**5%** of Exam

**Primary immunodeficiency**

Anatomic lesions

Lymphocyte defects

Combined immunodeficiency syndromes (including severe combined immunodeficiency [SCID])

Phagocytes

Complement deficiencies

NK cell deficiencies

**Hematologic malignancies and stem cell transplantation**

Infections associated with chemotherapy-induced neutropenia

Stem cell transplant

Syndromes

Noninfectious conditions

**Solid-organ transplantation**

Donor-derived infections

Surgical site infections

Hospital-acquired infection

Opportunistic infections  
Noninfectious conditions

**Complications of immunosuppression in non-transplant population  
(disease-modifying agents, including tumor necrosis  
factor [TNF] blockers, corticosteroids)**

Bacteria  
Fungi  
Viruses  
Parasites and protozoa

**Infection prevention in the immunosuppressed host**

Immunizations  
Antimicrobials  
Environmental control

**Vaccinations**

**4%** of Exam

**Active immunizations (vaccines)**

Pneumococcal  
Influenza  
Tetanus, diphtheria, and acellular pertussis  
*Haemophilus influenzae*  
Hepatitis B  
Hepatitis A  
Measles, mumps, and rubella  
Polio  
Meningococcal  
Rabies  
Varicella  
Herpes zoster  
Human papillomavirus (HPV)

**Passive immunizations**

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**

Outbreak investigation  
Healthcare quality improvement

## **Healthcare-associated infections (HAIs) of organ systems**

- 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**

- Bacterial infections
- Mycobacterial and fungal infections
- Viral infections

## **Epidemiology and prevention of HAIs in special patient populations**

- HAIs in obstetrics
- HAIs in neoplastic diseases
- HAIs in organ transplant and hematopoietic stem cell transplant

## **Epidemiology and prevention of HAIs in therapeutic procedures**

- 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**

- Environmental services
- Disinfection and sterilization

## **Epidemiology and prevention of HAIs in healthcare workers**

- 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**

- 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**

- Malignancies
- Hemophagocytic lymphohistiocytosis (Hemophagocytic syndrome)
- Noninfectious inflammatory disorders (e.g., vasculitis, lupus, inflammatory bowel disease)
- 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
- E-cigarette or vaping product use–associated lung injury (EVALI)

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