

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% |
| General Internal Medicine, Critical Care, and Surgery | 18% |
| | 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.

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's 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
Streptogramins
Tetracyclines
Non-sulfonamide (sulfa drug), non-trimethoprim
urinary tract agents
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 philippinensis (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*, *Exophila*, and others)

Superficial and subcutaneous mycoses

Mycetoma

Chromoblastomycosis

Malassezia

Dermatophytes

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

Therapy

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

Smallpox

Rabies

Varicella

Herpes zoster

Human papillomavirus (HPV)

Anthrax

Passive immunizations

Varicella-zoster virus

Rabies

Hepatitis B

Tetanus

Immune globulin

Other (including cytomegalovirus immune globulin)

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 (i.e., infectious disease “mimics”),
Critical Care, and Surgery**

18% of Exam

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
Near-drowning and *Scedosporium* and
Pseudallescheria infection