

Medical Oncology

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 medical oncologist 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 medical oncologist.

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
Hematologic Neoplasms	14%
Thoracic Cancer	11%
Breast Cancer	13%
Genitourinary Cancer	11.5%
Gynecologic Cancer	4%
Gastrointestinal Cancer	13.5%
Skin Cancer, Sarcomas, and Unknown Primary Site	6%
Anticancer Therapeutics, Clinical Research Methodology, and Ethics	10%
Supportive Care, Survivorship, and Communication	11%
Head, Neck, Thyroid, and Central Nervous System Malignancies	4%
Genetics and Tumor Biology	2%
	100%

Exam format

The exam is composed of multiple-choice questions, predominantly describing patient scenarios. Most or all of the multiple-choice questions will be in the single-best-answer format; a small number may be multiple-response questions that require the selection of two or three correct options. The specific number of options to select will be indicated in text of the multiple-response questions.

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, computed tomograms, photomicrographs, magnetic resonance images, an equianalgesic table, bone scans, family pedigree charts, nomograms, 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/medical-oncology/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.

Hematologic Neoplasms	14% of Exam
Acute leukemia and myelodysplasia	3%
Acute myeloid leukemia (AML)	
Acute promyelocytic leukemia (APL)	
AML with recurrent genetic abnormalities	
AML with myelodysplasia-related changes	
Therapy-related myeloid neoplasms	
AML not otherwise specified	
Myeloid sarcoma	

Acute lymphoblastic leukemia	
Myelodysplastic syndromes	
Chronic myelomonocytic leukemia	
Chronic myeloid leukemia and myeloproliferative neoplasms	2%
Chronic myeloid leukemia	
Myeloproliferative neoplasms	
Chronic lymphoproliferative leukemias	2%
Chronic lymphocytic leukemia/small lymphocytic lymphoma	
Hairy cell leukemia	
T-cell prolymphocytic leukemia	
T-cell large granular lymphocytic leukemia	
Monoclonal B-cell lymphocytosis	
Hodgkin lymphoma	<2%
Early-stage disease	
Advanced disease	
Multiple myeloma and plasma cell dyscrasias	2%
Multiple myeloma/plasma cell leukemia	
Solitary plasmacytoma	
Primary amyloidosis	
Cryoglobulinemia	
Monoclonal gammopathy of undetermined significance (MGUS)	
Waldenström macroglobulinemia	
POEMS syndrome (polyneuropathy, organ enlargement, Endocrinopathy monoclonal plasma-proliferative disorder, skin changes)	
Non-Hodgkin lymphoma	4%
Low-grade disease	
Intermediate-grade disease	
High-grade disease	
Less common histologies	
Mantle cell lymphoma	
NK-T cell lymphoma	
Anaplastic large cell lymphoma	
Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma)	
Nodal marginal zone lymphoma	
Human immunodeficiency virus (HIV)-associated lymphoma	
Human T-cell lymphotropic virus type 1-associated Lymphoma (adult T-cell leukemia/lymphoma)	
Cutaneous T-cell lymphoma	

Primary central nervous system lymphoma
 Post-transplantation lymphoproliferative syndromes
 Peripheral T-cell lymphoma

Thoracic Cancer	11% of Exam
Non-small cell lung cancer	9%
Early-stage disease	
Locally advanced disease	
Stage IIIA disease	
Stage IIIB disease	
Pancoast tumor	
Metastatic disease	
Adenocarcinoma	
Squamous cell carcinoma	
Small cell lung cancer	<2%
Limited disease	
Extensive disease	
Mesothelioma and thymus cancer	<2%
Mesothelioma	
Thymus cancer	

Breast Cancer	13% of Exam
Premalignant conditions and high-risk factors	<2%
High-risk histologies	
Genetic predispositions and other high-risk features	
Carcinoma in situ	<2%
Early-stage and locally advanced invasive carcinoma	4.5%
HER2-positive disease	
HER2-negative, hormone receptor–positive disease	
HER2-negative, hormone receptor–negative (triple-negative) disease	
Inflammatory disease	<2%
Locally recurrent disease	<2%
In-breast recurrence	
Chest wall recurrence	
Metastatic disease	4.5%
HER2-positive metastatic disease	
HER2-negative, hormone receptor–positive metastatic disease	
HER2-negative, hormone receptor–negative, (triple-negative) metastatic disease	

Less common histologies and clinical scenarios	<2%
Tubular carcinoma	
Male breast cancer	

Genitourinary Cancer	11.5% of Exam
-----------------------------	----------------------

Germ cell tumors	<2%
Seminoma	
Nonseminoma	
Germ cell tumor type not specified	
Prostate cancer	5%
Localized disease	
Locally advanced disease	
Prostate-specific antigen-only disease	
Metastatic disease	
Metastatic hormone-sensitive disease	
Metastatic castration-resistant disease	
Special issues in prostate cancer	
Small cell carcinoma	
Renal cell cancer	2.5%
Localized disease	
Metastatic disease	
Special issues in renal cell cancer	
Bilateral renal tumors	
Non-clear cell histologies	
Urothelial and other genitourinary cancers	2.5%
Bladder cancer	
Non-muscle-invasive disease	
Muscle-invasive disease	
Metastatic disease	
Other urothelial cancers	
Upper tract urothelial cancer	
Urethral cancer	

Gynecologic Cancer	4% of Exam
---------------------------	-------------------

Cervical cancer	<2%
Locally advanced disease(stages IIB and III)	
Recurrent and metastatic disease	
Ovarian, fallopian tube, and primary peritoneal cancers	2%
Epithelial ovarian, fallopian tube, and primary peritoneal cancers	

Stage I	
Stages II-IV	
Nonepithelial ovarian cancers	
Borderline (low malignant potential) cancers	
Other gynecologic malignancies	<2%
Endometrial cancer	
Uterine sarcoma	
Gestational trophoblastic disease	
Cancers of the vulva and vagina	

Gastrointestinal Cancer	13.5% of
Exam	
Anal cancer	<2%
Local-regional disease	
Recurrent and metastatic disease	
Biliary tree and gallbladder cancer	<2%
Local-regional disease	
Recurrent and metastatic disease	
Colorectal cancer	4.5%
Colon cancer	
Local-regional disease	
Recurrent and metastatic disease	
Rectal cancer	
Local-regional disease	
Recurrent and metastatic disease	
Esophageal cancer	<2%
Local-regional disease	
Recurrent and metastatic disease	
Gastric cancer	<2%
Resectable disease	
Unresectable and metastatic disease	
Hepatocellular cancer	<2%
Resectable disease	
Unresectable, liver-only disease	
Metastatic disease	
Gastrointestinal neuroendocrine tumors	<2%
Pancreatic cancer	3%
Resectable disease	
Unresectable disease	
Metastatic and recurrent disease	

Small bowel and appendiceal cancer	<2%
Small bowel cancer	
Appendiceal cancer	

Skin Cancer, Sarcomas, and Unknown Primary Site	6% of Exam
--	-------------------

Melanoma	<2%
Invasive melanoma	
Regional nodal and in-transit metastasis	
Metastatic disease	
Other skin cancers	<2%
Squamous cell and basal cell cancer of the skin	
Local-regional disease	
Recurrent and metastatic disease	
Merkel cell carcinoma	
Bone and soft-tissue sarcomas	<2%
Localized primary disease	
Local disease recurrence	
Metastatic disease	
Gastrointestinal stromal tumor (GIST)	
Local-regional disease	
Recurrent and metastatic disease	
Unknown primary site	2.5%

Anticancer Therapeutics, Clinical Research Methodology, and Ethics	10% of Exam
---	--------------------

Principles of allied disciplines	<2%
Surgical oncology	
Radiation oncology	
Interventional radiology	
Pathology	
Anticancer therapeutics	8%
Cytotoxic chemotherapy agents	
Alkylating agents	
Antimetabolites	
Antitubulin agents	
Anthracyclines	
Topoisomerase I inhibitors	
Topoisomerase II inhibitors	
Bleomycin and other DNA-damaging agents	
Chemotherapy-drug interactions	

Hormonal therapies

- Estrogens and selective estrogen response modifiers

- Progestins and antiprogestins

- Aromatase inhibitors

- Androgens and antiandrogens

- Gonadotropin-releasing hormone analogues

- Glucocorticoids

Small molecule kinase inhibitors

- BCR-ABL1 inhibitors

- Epidermal growth factor receptor (EGFR) inhibitors

- Vascular endothelial growth factor receptor (VEGFR)/multitargeted inhibitors

- BRAF inhibitors

- Anaplastic lymphoma kinase (ALK) and mesenchymal epithelial transition (MET) growth factor inhibitors

- RET inhibitors

- Mitogen-activated protein kinase (MEK) inhibitors

- Bruton tyrosine kinase (BTK) inhibitors

- Janus kinase (JAK) inhibitors

- Phosphoinositide-3 kinase (PI3K) inhibitors

- Mammalian target of rapamycin (mTOR) inhibitors

- Cyclin-dependent kinase (CDK) inhibitors

Agents with epigenetic activity

- Histone deacetylase (HDAC) inhibitors

- DNA methyltransferase inhibitors

Metabolic inhibitors other than antimetabolites

Monoclonal antibodies and antibody conjugates other than immune checkpoint inhibitors

- Monoclonal antibodies targeting EGFR, HER2, HER3, HER4

- Monoclonal antibodies targeting VEGFR pathway

- Monoclonal antibodies targeting B cell antigens (including CD20)

- Monoclonal antibodies targeting interleukin-6 (IL-6)

- Bispecific monoclonal antibodies

Monoclonal antibody immune checkpoint inhibitors

- Agents targeting cytotoxic T-lymphocyte-associated antigen 4 (CTLA4)

- Agents targeting programmed cell death protein 1 (PD-1) and programmed cell death ligand 1 (PD-L1)

Tumor vaccines and viral-based immunotherapeutics

Cytokines

- Agents with other novel or specific targets
 - Proteasome inhibitors
 - Immunomodulatory drugs (IMiDs)
 - Hedgehog (Hh) inhibitors
 - Poly(ADP-ribose) polymerase (PARP) inhibitors
 - Arsenicals
- Cellular therapeutics
 - High-dose therapy with stem cell rescue (autologous and allogeneic)
 - Chimeric antigen receptor (CAR) T-cell therapy

Clinical research methodology and ethics <2%

- Clinical research methodology
 - Design and interpretation of clinical trials
 - Tumor assessment, imaging, and end points
 - Surrogate end points
- Ethics
 - Human subjects and regulatory and legal issues
 - Physician behavior and conflict of interest

Supportive Care, Survivorship, and Communication	11% of Exam
---	--------------------

Clinical manifestations of advanced cancer and its treatment 4.5%

- Cutaneous and mucosal manifestations
- Endocrine manifestations
- Gastrointestinal manifestations
 - Ascites and peritoneal metastases
 - Liver manifestations
 - Constipation
 - Diarrhea
 - Nausea and vomiting
 - Bowel obstruction
 - Esophagitis
- Hematologic manifestations
 - Bleeding
 - Thrombosis
 - Neutropenia
 - Anemia
 - Transfusion reactions
- Musculoskeletal manifestations
- Neurologic manifestations
- Renal, metabolic, and nutritional manifestations

Paraneoplastic syndromes	
Thoracic manifestations	
Pleural and pericardial effusions	
Pneumonitis	
Dyspnea	
Cough	
Fatigue	
Psychiatric manifestations	
Depression	
Anxiety	
Delirium	
Infectious risks and complications	
Infections	
Febrile neutropenia	
Cancer pain	2%
Use of opioids	
Use of nonopioids	
Survivorship issues	<2%
Fertility	
Second primary cancers	
Secondary cancer prevention	
Nonmalignant sequelae	
Surveillance	
End-of-life issues	2%
Hospice	
Feeding and nutrition	
Decision making	
Procedure-related issues	<2%
Chemotherapy administration	
Bone marrow aspiration, biopsy, and interpretation	
Tumor assessment	
Thoracentesis	
Paracentesis	
Feeding tubes	
Communication	<2%
Communicating prognosis and other clinical information	
Discussing goals of care	
Discussing survivorship issues	

Head, Neck, Thyroid, and Central Nervous System Malignancies	4% of Exam
Squamous cell carcinoma of the head and neck	<2%
Human papillomavirus–positive disease	
Local-regional disease	
Recurrent and metastatic disease	
Human papillomavirus–negative disease	
Local-regional disease	
Recurrent and metastatic disease	
Salivary gland tumors	<2%
Thyroid cancer	<2%
Papillary	
Medullary	
Anaplastic	
Nasopharyngeal carcinoma	<2%
Local and regional disease	
Metastatic disease	
Central nervous system malignancies	<2%
Primary central nervous system lesions	
Astrocytoma and glioblastoma multiforme	
Oligodendroglioma and other central nervous system lesions	
Metastatic central nervous system lesions	
Parenchymal metastases	
Meningeal metastases	

Genetics and Tumor Biology	2% of Exam
Cancer biology and genetics	<2%
Carcinogenesis	
Genomics	
Tumor immunology	<2%
Heritable cancer syndromes	<2%
Li-Fraumeni syndrome (<i>TP53</i>)	
<i>BRCA1</i> and <i>BRCA2</i> syndromes	
Familial colorectal cancer	
Familial adenomatous polyposis	
Hereditary nonpolyposis colorectal cancer	
Multiple endocrine neoplasia and familial medullary thyroid cancer syndromes	
Cancer epidemiology and statistics	<2%