Clinical Science Examination
Content Outline

International Foundations of Medicine

National Board of Medical Examiners
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Physician Tasks/Competencies

Test Specifications

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<th>Topic</th>
<th>Range</th>
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<tbody>
<tr>
<td>Medical Knowledge/Scientific Concepts</td>
<td>13%–18%</td>
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<tr>
<td>Patient Care: Diagnosis</td>
<td>43%–48%</td>
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<tr>
<td>Patient Care: Management</td>
<td>32%–37%</td>
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<tr>
<td>Professionalism</td>
<td>1%–2%</td>
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<tr>
<td>Patient Safety</td>
<td>1%–2%</td>
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<tr>
<td>Practice-based Learning</td>
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Medical Knowledge/Scientific Concepts
   Applying foundational science concepts

Patient Care: Diagnosis
   History and physical examination
   Laboratory and diagnostic studies
   Diagnosis
   Prognosis/outcome

Patient Care: Management
   Health maintenance and disease prevention
   Pharmacotherapy
   Clinical interventions
   Mixed management

Professionalism
   Professionalism/legal/ethical issues in interaction with patients and families
   Professionalism/legal/ethical issues in interactions with patients and families related to death and dying
   Professionalism/legal/ethical issues in interactions with other health professionals

Patient Safety

Practice-based Learning
   Understanding and application of principles of biostatistics, public health, and epidemiology
   Understanding of the principles of research ethics and regulatory issues
## Content Categories

### Test Specifications

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<thead>
<tr>
<th>Topic</th>
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<tr>
<td>Normal Age-related Findings</td>
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<tr>
<td>Immune System</td>
<td>2%–4%</td>
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<td>Blood and Lymphoreticular System</td>
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<td>Behavioral Health</td>
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<td>Skin and Subcutaneous Tissue</td>
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<tr>
<td>Musculoskeletal System</td>
<td>6%–8%</td>
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<tr>
<td>Cardiovascular System</td>
<td>8%–10%</td>
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<td>Respiratory System</td>
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<td>Pregnancy, Childbirth, and the Puerperium</td>
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<td>Female Reproductive System &amp; Breast</td>
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<td>Male Reproductive System</td>
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<td>Endocrine System</td>
<td>6%–8%</td>
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<td>Multisystem Processes &amp; Disorders</td>
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<tr>
<td>Biostatistics, Epidemiology, and Public/Population Health</td>
<td>3%–5%</td>
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<tr>
<td>Social Sciences</td>
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### Normal Age-related Findings

- Infancy and Childhood (0 to 12 years)
- Adolescence (13-17 years)
- Adulthood (18-64 years)
- Senescence (65 years and older)

### Immune System

- Disorders associated with immunodeficiency
- HIV/AIDS
- Immunologically mediated disorders
- Adverse effects of drugs on the immune system

### Blood and Lymphoreticular System

- Infectious and immunologic
- Neoplasms
- Anemia, cytopenias, and polycythemia
Coagulation disorders (hypocoagulable and hypercoagulable conditions)
Traumatic, mechanical, and vascular disorders
Adverse effects of drugs on the hematologic and lymphoreticular systems

**Behavioral Health**
- Psychotic disorders
- Anxiety disorders
- Mood disorders
- Somatoform disorders
- Factitious disorders
- Eating disorders and impulse control disorders
- Disorders originating in infancy/childhood
- Personality disorders
- Psychosocial disorders/behaviors
- Substance use disorders

**Nervous System and Special Senses**
- Infectious, immunologic, inflammatory disorders
- Neoplasms (cerebral, spinal, and peripheral)
- Cerebrovascular disease
- Disorders relating to the spine, spinal cord, and spinal nerve roots
- Cranial and peripheral nerve disorders
- Neurologic pain syndromes
- Degenerative disorders/amnestic syndromes
- Global cerebral dysfunction
- Neuromuscular disorders
- Movement disorders
- Metabolic disorders
- Paroxysmal disorders
Sleep disorders
Traumatic and mechanical disorders and disorders of increased intracranial pressure
Congenital disorders
Adverse effects of drugs on the nervous system
Disorders of the eye and the eyelid
Disorders of the ear

**Skin and Subcutaneous Tissue**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Adnexal disorders (hair and hair follicles, nails, sweat gland, sebaceous glands, oral mucous membranes)
Oral disease
Disorders of pigmentation
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on skin and subcutaneous tissue

**Musculoskeletal System**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Degenerative and metabolic disorders
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the musculoskeletal system

**Cardiovascular System**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Dysrhythmias
Heart failure
Ischemic heart disease
Diseases of the myocardium
Diseases of the pericardium
Valvular heart disease
Hypotension
Hypertension
Dyslipidemia
Vascular disorders
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the cardiovascular system

**Respiratory System**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Obstructive airway disease
Pneumoconiosis/fibrozing/restrictive pulmonary disorders/interstitial lung disease
Respiratory failure/respiratory arrest and pulmonary vascular disorders
Metabolic, regulatory, and structural disorders
Disorders of the pleura, mediastinum, and chest wall
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the respiratory system

**Gastrointestinal System**
Infectious, immunological, and inflammatory disorders
Neoplasms
Signs, symptoms, and ill-defined disorders
Disorders of the oral cavity, salivary glands, and esophagus
Disorders of the stomach, small intestine, colon, rectum, and anus
Disorders of the liver and biliary system, noninfectious
Disorders of the pancreas
Disorders of the peritoneal cavity
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the gastrointestinal system

**Renal and Urinary Systems**
- Infectious, immunologic, and inflammatory disorders
- Neoplasms
- Signs, symptoms, and ill-defined disorders
- Metabolic and regulatory disorders
- Vascular disorders
- Traumatic and mechanical disorders
- Congenital disorders
- Adverse effects of drugs on the renal and urinary system

**Pregnancy, Childbirth, and the Puerperium**
- Prenatal care
- Obstetric complications
- Labor and delivery
- Puerperium, including complications
- Newborn (birth to 4 weeks of age)
- Congenital disorders, neonatal
- Adverse effects of drugs on pregnancy, childbirth, and the puerperium
- Systemic disorders affecting pregnancy, labor and delivery, and puerperium

**Female Reproductive System & Breast**
- Infectious, immunologic, and inflammatory disorders
- Neoplasms of the breast, cervix, ovary, uterus, vagina, and vulva
- Fertility and infertility
- Menopause
- Menstrual and endocrine disorders
- Sexual dysfunction
- Traumatic and mechanical disorders
Congenital disorders

Adverse effects of drugs on the female reproductive system and breast

**Male Reproductive System**

Infectious, immunologic, and inflammatory disorders

Neoplasms

Metabolic and regulatory disorders, including sexual dysfunction

Traumatic and mechanical disorders

Congenital disorders

Adverse effects of drugs on the male reproductive system

**Endocrine System**

Diabetes mellitus and other disorders of the endocrine pancreas

Thyroid disorders

Parathyroid disorders

Adrenal disorders

Pituitary disorders

Hypothalamic endocrine disorders

Multiple endocrine neoplasia (MEN1, MEN2)

Congenital disorders

Adverse effects of drugs on the endocrine system

**Multisystem Processes & Disorders**

Infectious, immunologic, and inflammatory disorders

Neoplasms and related disorders

Signs, symptoms, and ill-defined disorders

Nutrition

Toxins and environmental extremes

Venomous bites and stings

Fluid, electrolyte, and acid-base balance disorders

Abuse

Multiple trauma (e.g., prioritization, blast injury)
Shock, cardiogenic, hypovolemic, neurogenic, septic; sepsis, bacteremia, systemic inflammatory response syndrome (SIRS), refractory, multiorgan dysfunction syndrome

Genetic metabolic and developmental disorders

Adverse effects of drugs on multisystem disorders

**Biostatistics, Epidemiology, and Public/Population Health**

**Epidemiology and public/population health**
- Measures of disease frequency: incidence/prevalence
- Measures of health status
- Population pyramids and impact of demographic changes
- Disease surveillance and outbreak investigation
- Communicable disease transmission
- Points of intervention

**Study design, types and selection of studies**
- **Measures of association** (e.g., relative risk, odds ratio, other)
- **Principles of testing and screening** (e.g., sensitivity and specificity, predictive value, probability)
- **Study interpretation** (e.g., causation, validity, statistical vs. clinical significance)
- **Research ethics** (e.g., informed consent, privacy of patient data, regulatory issues)

**Social Sciences**
- **Medical ethics and jurisprudence**
  - Consent to treatment/decision-making capacity
  - Death and dying and palliative care
  - Physician-patient relationship
  - Professional conduct/integrity

**Patient safety (including basic concepts and terminology)**