USMLE
United States
Medical
Licensing
Examination

CONTENT DESCRIPTION
and GENERAL INFORMATION

Step 2 Clinical Knowledge

A Joint Program of the Federation of State Medical Boards of the United States, Inc., and National Board of Medical Examiners®

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INTRODUCTION

This booklet will help you prepare for the Step 2 Clinical Knowledge (Step 2 CK) component of the United States Medical Licensing Examination® (USMLE®).

Practice materials, which include Sample Test Items (PDF) and web-based Tutorial and Practice Test Items, as well as other informational materials, are available at the USMLE website www.usmle.org. Examinees must also read the *USMLE Bulletin of Information* at www.usmle.org/bulletin.

IMPORTANT:

- You **must** run the web-based Tutorial (https://orientation.nbme.org/Launch/USMLE/STPF2) and Practice Test Items (https://www.usmle.org/pdfs/step-2-ck/Step2CK_SampleItems.pdf) to become familiar with the test software **prior to your test date**. The web-based version includes single multiple-choice questions, a sequential set of multiple-choice questions, a scientific abstract (a summary of an experiment or clinical investigation, accompanied by two or more questions), and items with audio findings.
    - The tutorial provided at the beginning of the Step 2 CK Examination has fewer screens and less detailed information than the Step 2 CK practice materials on the USMLE website.
- If you registered for the USMLE Step 2 Clinical Knowledge examination and received your scheduling permit, you are eligible to register to take a Practice Session for the examination at a Prometric test center. You may take only one session per exam registration and must take it in the same testing region as your Step exam. You can register for the Practice Session here https://apps.nbme.org/CBTPSRegistrationWeb/jsp/usmle_CBTPS_registration.jsp
- The term *item* is used to describe a test question in any format.

Please visit the USMLE website www.usmle.org often to view announcements regarding changes in test delivery software, and to access updated practice materials. You must obtain the most recent information before taking any USMLE examination.

EXAMINATION FORMAT

Step 2 CK consists of multiple-choice questions (MCQs), also known as items, created by USMLE committees composed of faculty members, investigators, and clinicians with recognized prominence in their respective fields. Committee members are selected to provide broad representation from the academic, practice, and licensing communities across the United States and Canada.

Step 2 CK is a one-day examination. It is divided into eight 60-minute blocks and administered in one 9-hour testing session. The number of questions per block on a given examination will vary but will not exceed 40. The total number of items on the overall examination will not exceed 318.

The examination also includes a minimum allotment of 45 minutes of break time and a 15-minute optional tutorial. The amount of time available for breaks may be increased by finishing a block of test items or the optional tutorial before the allotted time expires.

PURPOSE AND DESIGN OF THE EXAMINATION

Step 2 CK assesses an examinee's ability to apply medical knowledge, skills, and understanding of clinical science essential for the provision of patient care under supervision and includes emphasis on health promotion and disease prevention. Step 2 CK ensures that due attention is devoted to principles of clinical sciences and basic patient-centered skills that provide the foundation for the safe and competent practice of medicine under supervision.

Test questions focus on the principles of clinical science that are deemed important for the practice of medicine under supervision in postgraduate training.

CONTENT DESCRIPTION

The content description that follows is not intended as a curriculum development or study guide but rather models the range of challenges that will be met in the actual practice of medicine. It provides a flexible structure for test construction that can readily accommodate new topics, emerging content domains, and shifts in emphasis. The categorizations and content coverage are subject to change. The best preparation for the examination is broad-based learning that establishes a strong general understanding of concepts and principles in the basic and clinical sciences.

Content Outline

All USMLE examinations are constructed from an integrated content outline, available on the USMLE website (www.usmle.org/pdfs/usmlecontentoutline.pdf), which organizes content according to general principles and individual organ systems. Test questions are classified into one of 18 major categories, depending on whether they focus on concepts and principles that are applicable across organ systems or within individual organ systems.

Step 2 CK content weighting for these topics is provided in Table 1 below. Sections focusing on individual organ systems are subdivided according to normal and abnormal processes, including principles of therapy. In most instances, knowledge of normal processes is evaluated in the context of a disease process or specific pathology.

While not all topics listed in the content outline are included in every USMLE examination, overall content coverage is comparable among the various examination forms that will be taken by different examinees for each Step.

Table 1: Step 2 CK System Specifications*

System	Range, %
General Principles**	2–4
Immune System	3–5
Blood & Lymphoreticular System	4–6
Behavioral Health	6–8
Nervous System & Special Senses	6–8
Musculoskeletal System/Skin & Subcutaneous Tissue	6–10
Cardiovascular System	8–10
Respiratory System	7–9
Gastrointestinal System	7–9
Renal & Urinary System & Male Reproductive	4–6
Pregnancy, Childbirth & the Puerperium	4–6
Female Reproductive System & Breast	4–6
Endocrine System	4–6
Multisystem Processes & Disorders	4–6
Biostatistics & Epidemiology/Population Health/Interpretation of Medical Literature	3–5
Social Sciences: Legal/Ethical Issues & Professionalism/Systems-based Practice & Patient Safety	10–15

*Percentages are subject to change at any time. See the USMLE website (www.usmle.org) for the most up-to-date information.
**The Step 2 CK General Principles category includes normal and abnormal processes that are not limited to specific organ systems.

Physician Tasks/Competencies

An additional organizing construct for Step 2 CK design is physician tasks and competencies. Each test item is constructed to assess one of the competencies listed in Table 2. Detailed information about the physician tasks and competencies outline is available at the USMLE website (www.usmle.org/pdfs/tcom.pdf).

Table 2: Step 2 CK Physician Tasks/Competencies Specifications*

Competency	Range, %
Laboratory/Diagnostic Studies	13–17
Diagnosis	16–20
Prognosis/Outcome	5–9
Health Maintenance/Disease Prevention	8–12
Pharmacotherapy	8–12
Clinical Interventions	6–10
Mixed Management	12–16
Practice-based Learning & Improvement	3–5
Professionalism	5–7
Systems-based Practice & Patient Safety	5–7

*Percentages are subject to change at any time. See the USMLE website (www.usmle.org) for the most up-to-date information.

Discipline

Each Step 2 CK examination covers content related to the traditionally defined disciplines listed in Table 3.

Table 3: Step 2 CK Discipline Specifications*

Discipline	Range, %
Medicine	50–60
Surgery	25–30
Pediatrics	20–25
Obstetrics & Gynecology	10–20
Psychiatry	10–15

*Percentages are subject to change at any time. See the USMLE website (www.usmle.org) for the most up-to-date information.

STEP 2 CK MCQ CONTENT AND COMPETENCY EXAMPLES

Examples of MCQs focused on each of the competencies and samples of topics from different areas of the content outline are shown below.

Competency: Laboratory/Diagnostic Studies

Content Area: Behavioral Health

A 17-year-old girl comes to the office for an examination prior to entering college. She reports that she feels well but is nervous about leaving home for the first time. She states that she has tried to diet to improve her appearance but that food restriction often "backfires" because she becomes hungry and then engages in episodes of binge eating. She reports a loss of control during these episodes, saying, "It's like I stop thinking at all and before I know it, I have eaten two pizzas." She induces vomiting several times during each binge and has developed a pattern of binging and purging every evening. She has no history of serious illness and takes no medications. She is 165 cm (5 ft 5 in) tall and weighs 57 kg (125 lb); BMI is 21 kg/m^2. Vital signs are within normal limits. Physical examination shows dry mucous membranes, erosion of enamel on the lingual surface of the front teeth, and hypertrophy of the parotid gland. Serum studies are most likely to show which of the following sets of findings in this patient?

	Potassium	**Bicarbonate**
(A)	Decreased	decreased
(B)	Decreased	increased
(C)	Increased	decreased
(D)	Increased	increased
(E)	Normal	decreased
(F)	Normal	increased

Answer: B

Competency: Diagnosis

Content Area: Musculoskeletal Sys/Skin & Subcutaneous Tissue

A hospitalized 57-year-old man has had severe progressive pain in his left knee since awakening 2 hours ago. He was admitted to the hospital 2 days ago for an acute myocardial infarction. Cardiac catheterization showed occlusion of the left anterior descending artery, and he underwent placement of a stent. Current medications include aspirin, metoprolol, lisinopril, simvastatin, clopidogrel, and heparin. Vital signs are within normal limits. Examination of the knee shows a large effusion. The knee is hot to touch and erythematous. He holds the knee in 30 degrees of flexion; the pain is exacerbated with further flexion or extension. Laboratory studies show:

Hematocrit	40%
Leukocyte count	13,000/mm^3
Serum	
Ca^{2+}	9.2 mg/dL
Urea nitrogen	15 mg/dL
Creatinine	1.0 mg/dL
Albumin	3.6 g/dL

An x-ray of the left knee shows calcification of the synovium. Which of the following is the most likely diagnosis?

(A) Deep venous thrombosis
(B) Gonorrhea
(C) Gout
(D) Hemarthrosis
(E) Pseudogout
(F) Septic arthritis

Answer: E

Competency: Health Maintenance/Disease Prevention & Surveillance

Content Area: Pregnancy, Childbirth & the Puerperium

A 21-year-old woman comes to the office for counseling prior to conception. She is recently married and would like to conceive within the next year. She does not eat meat, fish, or dairy products and wishes to decrease the risks of her diet on her baby. Menses occur at regular 28-day intervals and last 5 days. She does not smoke or drink alcohol. She takes no medications. She is 157 cm (5 ft 2 in) tall and weighs 50 kg (110 lb); BMI is 20 kg/m^2. Physical examination shows no abnormalities. Pelvic examination shows a normal appearing vagina, cervix, uterus, and adnexa. Which of the following is most likely to decrease the risk of fetal anomalies in this patient?

(A) Adjusting diet to include more sources of protein during the first trimester
(B) Beginning folic acid supplementation prior to conception
(C) Calcium supplementation during the first trimester
(D) Iron supplementation during the first trimester
(E) Soy protein shakes throughout pregnancy and lactation

Answer: B

Competency: Clinical Interventions

Content Area: Immune System

A 10-year-old boy is brought for a follow-up examination 2 days after he was seen in the emergency department because of hives, hoarseness, and light-headedness. His symptoms began 15 minutes after he was stung by a bee and lasted approximately 60 minutes; they resolved before he was treated. He has been stung by bees three times over the past year, and each reaction has been more severe. Examination shows no abnormalities. Which of the following is the most appropriate recommendation to prevent future morbidity and mortality from this condition?

(A) Avoid areas known to have bees
(B) Avoid wearing colorful clothing outside
(C) Carrying diphenhydramine tablets
(D) Carrying self-injectable epinephrine
(E) Seek immediate medical attention following any future sting

Answer: D

Competency: Practice-based Learning

Content Area: Biostatistics

A cohort study is conducted to compare the incidence of adverse effects of a recently approved antihypertensive pharmacotherapy with that of conventional therapy. A total of 20,000 patients are enrolled. Twelve thousand are prescribed the recently approved therapy, and 8,000 are prescribed conventional therapy. Patients in the study and control groups are matched for baseline blood pressure, age, and gender. Data are collected from the records of the patients' ongoing clinical care. Results show that those receiving the newly approved treatment have twice the incidence of fatigue compared with those receiving the conventional treatment. The results are statistically significant (P=0.01). Which of the following potential flaws is most likely to invalidate this study?

(A) Publication bias
(B) Selection bias
(C) Type I error
(D) Type II error

Answer: B

Competency: Professionalism

Content Area: Social Sciences

Three days after hospitalization for diabetic ketoacidosis, an 87-year-old woman refuses insulin injections. She says that her medical condition has declined so much that she no longer wishes to go on living; she is nearly blind and will likely require bilateral leg amputations. She reports that she has always been an active person and does not see how her life will be of value anymore. She has no family and most of her friends are sick or deceased. On mental status examination, she is alert and cooperative. She accurately describes her medical history and understands the consequences of refusing insulin. There is no evidence of depression. She dismisses any attempts by the physician to change her mind, saying that the physician is too young to understand her situation. She says, "I know I will die, and this is what I want." Which of the following is the most appropriate next step in management?

(A) Discharge the patient after she has signed an "against medical advice" form
(B) Seek a court order to appoint a legal guardian
(C) Offer insulin but allow the patient to refuse it
(D) Admit to the psychiatric unit
(E) Administer insulin against the patient's wishes

Answer: C

Competency: Patient Safety

Content Area: Social Sciences

A 45-year-old woman is hospitalized for management of *Staphylococcus aureus* endocarditis with persistent bacteremia. The patient is discussed during interdisciplinary rounds, which includes physicians, nurses, pharmacists, and social workers. During rounds, a pharmacy student notices that the patient missed two doses of her scheduled antibiotic last week but is unsure why. The physician and nurse are unaware of these missed doses, and the student does not mention her observation. Which of the following measures is most likely to improve communication within this interdisciplinary health care team?

(A) Conduct interdisciplinary rounds in a quieter location
(B) Encourage questions from all team members
(C) Implement a checklist for standardizing patient rounds
(D) Use computers during rounds to review medications

Answer: B