Brief introduction

Quick poll: Know about step 1, have been doing questions, have used First Aid
Today’s Agenda

- What is the USMLE Step 1 exam?
- What is the Step 1 Method?
- Step 1 Method strategies
  - Question
  - Test
  - Scheduling
  - Motivation

Plan for today: briefly review the basics of the Step 1 Exam, then discuss how our method provides a tactical way to excel.

We will discuss the different aspects of strategy, starting with individual questions and working up to whole blocks in a similar test situation.

Equally important are the logistical strategies for scheduling practice exams,
There are three step exams spread out through your clinical training. But Step 1 is widely considered to be the most important.

Application as opposed to Memorization: we’ll come back to this

The questions that you’ll be tested on are written through a standardized process. And to help prepare they offer standardized tests that we’ll discuss later.
USMLE Step 1 Exam

- One-day computerized exam
  - 308 multiple-choice items
  - 7 blocks of 44 MCQs (60m per block)
  - 45-60 minutes of break time

- BEST answer (e.g., MCC)
  - Wrong choices don’t count against

- Test scaled and mean / pass changed yearly

- Passing, failing, and retaking
  - Red vs Black flags
  - Major impact on type & location of residency
    - Hard score cutoffs for interviews
Figure 1

Percentage of Programs Citing Each Factor And Mean Importance Rating* for Each Factor in Selecting Applicants to Interview (N=1,793)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent Citing Factor</th>
<th>Average Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USMLE Step 1/COMLEX Level 1 score</td>
<td>94%</td>
<td>4.1</td>
</tr>
<tr>
<td>Letters of recommendation in the specialty</td>
<td>86%</td>
<td>4.2</td>
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<tr>
<td>Medical Student Performance Evaluation (MSPE/Dean’s Letter)</td>
<td>84%</td>
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<tr>
<td>USMLE Step 2 CK/COMLEX Level 2 CE score</td>
<td>80%</td>
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<td>Personal Statement</td>
<td>78%</td>
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<tr>
<td>Graduate of U.S. allopathic medical school</td>
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<tr>
<td>Grades in required clerkships</td>
<td>70%</td>
<td>4.0</td>
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<tr>
<td>Gaps in medical education</td>
<td>70%</td>
<td>4.1</td>
</tr>
<tr>
<td>Honors in clinical clerkships</td>
<td>69%</td>
<td>4.0</td>
</tr>
<tr>
<td>Perceived commitment to specialty</td>
<td>69%</td>
<td>4.3</td>
</tr>
<tr>
<td>Class ranking/quarter</td>
<td>69%</td>
<td>3.9</td>
</tr>
<tr>
<td>Evidence of professionalism and ethics</td>
<td>65%</td>
<td>4.5</td>
</tr>
<tr>
<td>Personal prior knowledge of the applicant</td>
<td>65%</td>
<td>4.1</td>
</tr>
<tr>
<td>Audition elective/rotation within your department</td>
<td>63%</td>
<td>4.0</td>
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<tr>
<td>Leadership qualities</td>
<td>63%</td>
<td>4.0</td>
</tr>
<tr>
<td>Honors in clerkship in desired specialty</td>
<td>81%</td>
<td>4.3</td>
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<tr>
<td>Grades in clerkship in desired specialty</td>
<td>81%</td>
<td>4.3</td>
</tr>
<tr>
<td>Alpha Omega Alpha (AOA) membership</td>
<td>81%</td>
<td>3.8</td>
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</table>

This one number is more important than a recommendation within your field!
Most recent data from the 2014 year

3-digit scale
Max score: 300 (theoretical)
2014 mean: 229 (US MDs)
2014 pass: 192
MD pass rate 95%

Decent score: 220s
Good score: 230s
Great score: 240s
Amazing: 250s-260s
Unreal score: 270 (>97th percentile in 2014)
Herein lies the problem...

- USMLE Step 1 is incredibly important
- But clinical knowledge ≠ good test taking
- How can we change that?
‘experts’ in usmle strategy

These strategies are really important as step 1 and step 2 are about application and concepts, not memorization. This is not about factoids. Cannot study for step 1 the same way you do for undergrad exams, which is why having a specific framework and plan of attack is important.

Highlights:
Provide strategic help to a number of medical schools across the country
This includes online resources (some of which will be featured later)
One on One strategy coaching
Basic Definitions

- **Content vs Strategy**
  - The facts vs learning & applying them

- **Basic vs Clinical Science**
  - Recall vs application

- **High-Yield vs Low-Yield**
  - What’s *actually* tested on the exam
### Basic vs. Clinical Science

<table>
<thead>
<tr>
<th>Basic Sciences</th>
<th>Clinical Sciences</th>
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<tbody>
<tr>
<td>Biostatistics</td>
<td>Cardiology</td>
</tr>
<tr>
<td>Biochemistry*</td>
<td>Endocrinology</td>
</tr>
<tr>
<td>Genetics*</td>
<td>Gastroenterology</td>
</tr>
<tr>
<td>Embryology*</td>
<td>Neurology</td>
</tr>
<tr>
<td>Gross anatomy*</td>
<td>Psychiatry</td>
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<tr>
<td>Pharmacology*</td>
<td>Hematology</td>
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<tr>
<td>Histology</td>
<td>Oncology</td>
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<tr>
<td>Cell biology</td>
<td>Pulmonology</td>
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<tr>
<td>Microbiology*</td>
<td>Rheumatology</td>
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<td>Immunology*</td>
<td>Dermatology</td>
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<tr>
<td>Pathology*</td>
<td>Infectious Disease</td>
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<tr>
<td>Physiology*</td>
<td>Nephrology</td>
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</table>

* = Topics with Clinical Relevance
Application of Integrated Content

<table>
<thead>
<tr>
<th>System</th>
<th>Range</th>
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<tbody>
<tr>
<td>General Principles of Foundational Science**</td>
<td>15%-20%</td>
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<tr>
<td>Immune System</td>
<td></td>
</tr>
<tr>
<td>Blood &amp; Lymphoreticular System</td>
<td></td>
</tr>
<tr>
<td>Behavioral Health</td>
<td></td>
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<tr>
<td>Nervous System &amp; Special Senses</td>
<td></td>
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<tr>
<td>Skin &amp; Subcutaneous Tissue</td>
<td></td>
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<tr>
<td>Musculoskeletal System</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular System</td>
<td></td>
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<tr>
<td>Respiratory System</td>
<td></td>
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<tr>
<td>Gastrointestinal System</td>
<td></td>
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<tr>
<td>Renal &amp; Urinary System</td>
<td></td>
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<tr>
<td>Pregnancy, Childbirth, &amp; the Puerperium</td>
<td></td>
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<tr>
<td>Female Reproductive &amp; Breast</td>
<td></td>
</tr>
<tr>
<td>Male Reproductive Endocrine System</td>
<td></td>
</tr>
<tr>
<td>MultiSystem Processes &amp; Disorders</td>
<td>15%-20%</td>
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<tr>
<td>Biostatistics &amp; Epidemiology</td>
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<tr>
<td>Population Health</td>
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<tr>
<td>Social Sciences</td>
<td></td>
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<td>Process</td>
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<td>Normal Processes†</td>
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<tr>
<td>Abnormal Processes</td>
<td>55%-60%</td>
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<tr>
<td>Principles of Therapeutics</td>
<td>15%-20%</td>
</tr>
<tr>
<td>Other†</td>
<td>10%-15%</td>
</tr>
</tbody>
</table>
We’ll be diving into the fundamentals of our strategy next, so before we do are there any questions?
S1M Strategy Fundamentals

1. Anatomy of the Question
2. Code switching
3. EASE Method / Checkpoint system

Questions are the individual unit of this test and the build block of the S1M strategy
| **Knowledge** |
| **Interview / History** |
| **Observation** |
| **Physical exam** |
| **Data interpretation** |
| **Diagnosis** |
| **Management** |
Four days after an emergency colon resection for an obstructing tumor, a 79-year-old man experiences sudden onset of shortness of breath. He has longstanding hypertension and a 50 pack-year smoking history. Temperature is 99°F, blood pressure is 92/58, pulse is 108, and respiratory rate is 25 with an oxygen saturation of 88% on room air. On exam he appears somnolent. Jugular venous distension is present, and crackles are present over both lung bases. No murmurs or gallops are heard on cardiac exam. The abdomen is mildly distended with a well-healing incision in the left lower quadrant. An ECG shows a prominent S wave in lead I and inverted T waves in III and V1-3. Which of the following is the most likely diagnosis?

a) Acute pulmonary embolism
b) Budd-chiari syndrome
c) Cardiogenic shock
d) Hypovolemic shock
e) Septic shock
While the questions are often written with a similar flow to actual patient encounters, this is not the ideal way to tackle standardized questions.
Ask if need to review this
Anatomy of the Question
The recipe for every USMLE question

- Lead-In
  - "what is the most likely diagnosis"
- Identifier
  - "a 79 year old man...colon resection"
- Key Associations
  - "cough, fever, sputum production"
- Distractors
  - "travel, meds..."
Anatomy of the Question

A 5 year old boy is brought to the physician by his parents because of an 8 month history of difficulty walking. His parents say that he limps when he walks and has a waddling gait. When getting up from a sitting position, he uses his hands to walk up his thighs and push his body into a standing position. His parents have not noticed any weakness in his arms. His mother is an only child but she has an uncle who became bedridden as a child and died of respiratory arrest. The boy’s past medical history is significant for being born at 34 weeks gestation. Physical exam shows prominent calf muscles. Muscle strength is 4/5 at both hips but normal elsewhere. This patient most likely has a mutation coding for which of the following proteins?

A) Actin
B) Dystrophin
C) Frataxin
D) Myelin
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**Identifier**

**Key Associations**

**Distractors**

**Lead in**

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A 32 year old woman comes to her family doctor complaining of fatigue lasting about three months. She has been too tired to maintain her exercise routine and finds herself sleeping more. Despite a diminished appetite, she has gained 10 lbs in the last two months. On questioning, she admits that her hair has been more brittle. She denies any abrupt life changes such as loss of a family member or a break up. She reports that her mother suffers from premature ovarian failure, and her father has hypertension. The most appropriate initial test is:

A) PHQ9 Depression screen
B) Cortisol level
C) Sleep study
D) TSH
E) Blood counts

Identify:
- Lead in
- Identifier
- Key Associations
- Distractors
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Identify:
- Lead in
- Identifier
- Key Associations
- Distractors
Practice

A 75 yo man presents to the emergency room with sudden onset right sided numbness that started two hours ago. Daughter reports this has happened once before, but rapidly resolved to baseline. Medical history is significant for tobacco use, peripheral vascular disease, and hypertension controlled with HCTZ. Family history is notable for a sister with Turner’s syndrome. On examination, his vitals are: BP 220/105 HR 95 RR 24 T 98.9. He has 0/5 strength in his RUE, with 1/5 in his RLE. There is notable right facial droop, and patient is aphasic. Which of the following is the most likely site of pathology?

- Right anterior cerebral artery
- Right middle cerebral artery
- Right posterior cerebral artery
- Left anterior cerebral artery
- Left middle cerebral artery
- Left posterior cerebral artery

Lead in: last sentence
Identifier: 75 yo man
Key associations: vascular disease, hypertension with acute worse
Anatomy of the Question
The recipe for every USMLE question

- Inherent components of questions

- Break down → Understand

- Understand → Succeed!

  - Lead-In
    - "what is the most likely diagnosis"
  - Identifier
    - "a 70 year old man...colon resection"
  - Key Associations
    - "cough, fever, sputum production"
  - Distractors
    - "travel, meds..."
If I say erythema migrans or target rash you think of:
But if I say: “erythematous circular rash with a central prominence and intermediate clearing”

Code Switches

• An elaborate, laymen’s description of a pathognomonic clinical finding

• Used to raise the difficulty of questions
  – Removes memorization
The Code Switch: 
*Translate the Clinical Clue*

“When getting up from a sitting position, he uses his hands to walk up his thighs and push his body into a standing position.”  

Gower’s Maneuver

“Physical exam shows prominent calf muscles with lipomatous density.”  

Pseudohypertrophy

**Look for the code-switch in EVERY question...**

*And know what it is when you review!*

Used to remove rote memorization from this test

Will read things in book like “Erythema migrans” but the question will say “circular rash with some clearing and a central focus of redness”
This patient has subacute endocarditis, one of the more common causes of FUO

Osler node: Immune complex deposition causing inflammation

Janeway lesion: microemboli with abscess in dermis

Roth spot: Micro-clot
Caput medusae, or “head of medusa”, a code switch for the dilated superficial abdominal venous system that occurs with cirrhosis. It is caused by portal hypertension causing shunting of portal blood through collaterals.

It is one of several signs that can occur with cirrhosis, including a similar but physiologically differed sign – spider nevus (or angiomata). You may hear these describes as web like telangiectasias which blanch and fill from the center. It is pathologically caused by an increased amount of estrogen, which is common in cirrhotic as they cannot metabolize the hormone.
Practice Code Switches

- A 32 year old woman presents with extremity numbness without weakness. She has had similar symptoms of her face which resolved. MRI shows slender, digit shaped areas of hyperintensity surrounding the corpus callosum.

Dawson’s fingers are T2 hyperintense areas on imaging which are specific for multiple sclerosis. They appear this way as they follow the small medullary veins, signifying perivenous enhancement typical of multiple sclerosis and other demyelinating disease.
EASE Approach & Checkpoint System

• Designed as an optimal method for all Qs
• Allows habit formation and provides routine
• Maximizes performance on “stumpers”
• Most importantly → it works!

Standardized method for a standardized question
A 36-year-old woman comes to the physician because of intermittent abdominal cramps and diarrhea with occasional constipation. She has been having these symptoms since adolescence, but they have worsened over the past 3 months. She has had no fevers, weight loss, or changes in the color of her stool. Colonoscopy done 2 years ago showed no abnormalities. Vital signs and physical exam reveal no abnormalities. Tests for stool WBCs and occult blood are negative. Which of the following is the most likely diagnosis?

a) Cystic fibrosis
b) Inflammatory bowel disease
c) Irritable bowel syndrome
d) Pancreatic insufficiency
e) Peptic ulcer disease

E-A-S-E Approach:
>Examine framework
>Associate clues
>Summarize & rephrase
>Ensure & move on
The EASE approach:

A 36-year-old woman comes to the physician because of intermittent abdominal cramps and diarrhea with occasional constipation. She has been having these symptoms since adolescence, but they have worsened over the past 3 months. She has had no fevers, weight loss, or changes in the color of her stool. Colonoscopy done 2 years ago showed no abnormalities. Vital signs and physical exam reveal no abnormalities. Tests for stool WBCs and occult blood are negative. **Which of the following is the most likely diagnosis?**

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1) EXAMINE:  
Read Lead-In,  
Glance @ Answer Choices

Topic? GI  
Framework? Diagnosis  
→ Pay attention to H&P!
**The EASE approach:**

A 36-year-old woman comes to the physician because of **intermittent abdominal cramps and diarrhea with occasional constipation**. She has been having these **symptoms since adolescence**, but they have worsened over the past 3 months. She has had **no fevers, weight loss**, or changes in the color of her stool. Colonoscopy done 2 years ago showed **no abnormalities**. Vital signs and physical exam reveal no abnormalities. **Tests** for stool WBCs and occult blood are **negative**. Which of the following is the most likely diagnosis?

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**2) ASSOCIATE:**  
Associate key clinical clues with your identifier...

*Build a differential using the Checkpoint System*
The EASE approach:

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3) SUMMARIZE:

Combine your key clues into a succinct one-liner:

One-Liner: Young female, longterm alternating diarrhea/constipation, negative workup... What’s the Dx?
The EASE approach:

A 36-year-old woman comes to the physician because of intermittent abdominal cramps and diarrhea with occasional constipation. She has been having these symptoms since adolescence, but they have worsened over the past 3 months. She has had no fevers, weight loss, or changes in the color of her stool. Colonoscopy done 2 years ago showed no abnormalities. Vital signs and physical exam reveal no abnormalities. Tests for stool WBCs and occult blood are negative. Which of the following is the most likely diagnosis?

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c) Irritable bowel syndrome
d) Pancreatic insufficiency
e) Peptic ulcer disease

4) ENSURE:
Make sure you’ve actually answered THE QUESTION, then move on.
A 12-year-old girl is brought to the emergency department by her mother for a one-day history of dark urine and left flank pain. She has sickle cell disease and recently returned to the US from a family trip in Ethiopia. Temperature is 99.1F, pulse is 120/min, and respirations are 18/min. Physical exam reveals a slender habitus and conjunctival pallor. Lab studies on admission show a hemoglobin level of 4.2, decreased from a baseline of 8. There are many RBCs in the urine without casts or WBCs. Which of the following is the most likely cause of this patient’s hematuria?

a) Glomerulonephritis  
b) Nephrolithiasis  
c) Papillary necrosis  
d) Transitional cell carcinoma  
e) Urinary tract infection
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**E-A-S-E Approach:**

- Examine framework
- Associate clues
- Summarize & rephrase
- Ensure & move on

**Checkpoint System:**

Follow the data → systematically rule-in and rule-out DDx
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EXAMINE:
- Framework?
  - Renal - diagnosis
  - Initial dx? (can glance @ identifier)
  - Answer choices

ASSOCIATE (Checkpoint System):
Key associations?
- Young age
- Acute
- Dark urine w/ flank pain
Change in DDx?
- Yes \( \rightarrow \) D less likely

Key Associations?
- Sickle Cell
- Exposures?
Change in DDx?
- Yes \( \rightarrow \) B & E less likely

Key Associations?
- Tachy, conjunctival pallor (code switch?)
Change in DDx?
- Yes \( \rightarrow \) A less likely

Key Associations?
- Acute anemia in sickle cell patient \( \rightarrow \) code switch?
  - Sickle cell crisis!!
- RBCs in urine (no casts)
Change in DDx?
- Yes \( \rightarrow \) SCD crisis, C more likely

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She has sickle cell disease and recently returned to the US from a family trip in Ethiopia.

Temperature is 99.1°F, pulse is 120/min, and respirations are 18/min. Physical exam reveals a slender habitus and conjunctival pallor.

Lab studies on admission show a hemoglobin level of 4.2, decreased from a baseline of 8. There are many RBCs in the urine without casts or WBCs.
A 12-year-old girl is brought to the emergency department by her mother for a one-day history of dark urine and left flank pain. She has sickle cell disease and recently returned to the US from a family trip in Ethiopia. Temperature is 99.1°F, pulse is 120/min, and respirations are 18/min. Physical exam reveals a slender habitus and conjunctival pallor. Lab studies on admission show a hemoglobin level of 4.2, decreased from a baseline of 8. There are many RBCs in the urine without casts or WBCs. Which of the following is the most likely cause of this patient’s hematuria?

<table>
<thead>
<tr>
<th>a) Glomerulonephritis</th>
<th>b) Nephrolithiasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>c) Papillary necrosis</td>
<td>d) Transitional cell carcinoma</td>
</tr>
<tr>
<td>e) Urinary tract infection</td>
<td></td>
</tr>
</tbody>
</table>

**EXAMINE:**
- Framework?
- Renal - diagnosis
- Initial DDx? (can glance @ identifier)
- Answer choices

**ASSOCIATE (Checkpoint System):**
- Young age
- Acute
- Dark urine w/ flank pain
- Change in DDx? D less likely
- Sickle Cell
- Exposures?
- Change in DDx? B & E less likely
- Tachy, conjunctival pallor
- Change in DDX? A less likely
- SCD crisis with hematuria
- Change in DDx? C more likely

**SUMMARIZE**

*One-Liner:* 12F in sickle cell crisis with acute-onset hematuria and flank pain

*Rephrase:* cause of hematuria/flank pain in sickle cell crisis?

**ENSURE:** Papillary necrosis → most likely
Put it all together

A 32-year-old woman with type 1 diabetes mellitus has had progressive renal failure over the past 2 years. She has not yet started dialysis. Examination shows no abnormalities. Her hemoglobin concentration is 9 g/dL, hematocrit is 28%, and mean corpuscular volume is 94 m3. A blood smear shows normochromic, normocytic cells. Which of the following is the most likely cause?

A. Acute blood loss  
B. Chronic lymphocytic leukemia  
C. Erythrocyte enzyme deficiency  
D. Erythropoietin deficiency  
E. Immune hemolysis  
F. Microangiopathic hemolysis  
G. Polycythemia vera  
H. Sickle cell disease  
I. Sideroblastic anemia  
J. β-Thalassemia trait

Anatomy of the Q  
EASE  
Checkpoint: Normocytic, normochromic
**High Yield Question Tips**

- Be Systematic when you **practice and perform!**
  - Identify AoQ
  - Follow EASE – every practice question
  - Checkpoint System

- Look for the **Code-Switch!**

- **Media should help,** not distract!

- Make sure your answer **fits the clinical scenario!**

- Pay attention to each **topic’s/system’s “style”**
  - Gears up for high-yield review
Before we move on

These are the basic strategies to address individual questions. Next we’ll discuss studying and annotating strategy
We will discuss five key strategy techniques to maximize your studying efficiency.

Briefly go over steps.
The Big 4, Priming, Concepts

• “The Big 4”
  – Cardiovascular
  – Pulmonary
  – Gastrointestinal
  – Neurology

• “Priming” with Practice Questions
  – Pre/Post-Review topic-centered MCQs

• Concepts >> Factoids!
  – Redundancy is good (topic-centered MCQ blocks)
APPLY the framework
ASSOCIATE with other frameworks
ANTICIPATE potential questions while reviewing, and potential answers while doing qbank

Methodical framework; goal = use while studying first aid and while attempting / annotating review questions. Will help develop an organized diagnostic thought process. Outside circle = what you should study for each topic; inside square = how you should synthesize the information and apply to practice questions.
-patho= [e.g., deficient enzyme, rate-limiting step]
-clin= [e.g., classic signs, involved systems]
-diagnostics- [e.g., pathognomonic metabolites, CXR findings]
-mode= [e.g., inherited vs. acquired]
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A 36-year-old woman comes to the physician because of intermittent abdominal cramps and diarrhea with occasional constipation. She has been having these symptoms since adolescence, but they have worsened over the past 3 months. She has had no fevers, weight loss, or changes in the color of her stool. Colonoscopy done 2 years ago showed no abnormalities. Vital signs and physical exam reveal no abnormalities. Tests for stool WBCs and occult blood are negative. Which of the following is the most likely diagnosis?

a) Cystic fibrosis
b) Inflammatory bowel disease
c) Irritable bowel syndrome
d) Pancreatic insufficiency
e) Peptic ulcer disease
Apply S1M format to every question. Essential for using biochem framework.
*Pathognomonc clues / mnemonics = Self-Mutilating Behavior / He’s Got Purine Recovery Trouble
APPLY the framework
ASSOCIATE with other frameworks
ANTICIPATE potential questions while reviewing, and potential answers while doing qbank

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Annotation

• Key point: Every fact that leads to a correct or missed question needs to be in your book!

• ...but most already are!
### Hypothyroidism vs. Hyperthyroidism

<table>
<thead>
<tr>
<th>Hypothyroidism</th>
<th>Hyperthyroidism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Signs/symptoms</strong></td>
<td><strong>Signs/symptoms</strong></td>
</tr>
<tr>
<td>Cold intolerance (↓ heat production)</td>
<td>Heat intolerance (↑ heat production)</td>
</tr>
<tr>
<td>Weight gain, ↓ appetite</td>
<td>Weight loss, ↑ appetite</td>
</tr>
<tr>
<td>Hypoactivity, lethargy, fatigue, weakness</td>
<td>Hyperactivity</td>
</tr>
<tr>
<td>Constipation</td>
<td>Diarrhea</td>
</tr>
<tr>
<td>↓ reflexes</td>
<td>↑ reflexes</td>
</tr>
<tr>
<td>Myxedema (facial/periocular)</td>
<td>Pretibial myxedema (Graves’ disease)</td>
</tr>
<tr>
<td>Dry, cool skin, coarse, brittle hair</td>
<td>Warm, moist skin; fine hair</td>
</tr>
<tr>
<td>Bradycardia, dyspnea on exertion</td>
<td>Chest pain, palpitations, arrhythmias, ↑ β-adrenergic receptors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab findings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>↑ TSH (sensitive test for 1st hypothyroidism)</td>
<td>↓ TSH (if 1st)</td>
</tr>
<tr>
<td>↓ total $T_4$</td>
<td>↑ total $T_3$</td>
</tr>
<tr>
<td>↓ free $T_4$</td>
<td>↑ free $T_3$</td>
</tr>
<tr>
<td>↓ $T_3$ uptake</td>
<td>↑ $T_3$ uptake</td>
</tr>
</tbody>
</table>

### Hypothyroidism

- **Hashimoto’s thyroiditis**: Most common cause of hypothyroidism; an autoimmune disorder (autoimmune, antithyroidglobulin antibodies). Associated with fibrotic, cavitary, and Hashimoto’s encephalopathy.
- May be hyperthyroid early in course (thyrotoxicosis during follicular rupture).
Addison's disease

Chronic 3rd adrenal insufficiency due to adrenal atrophy or destruction by disease (e.g., autoimmune, TB, metastases). Deficiency of aldosterone and cortisol, causing hypotension (hypovolemic), hyperkalemia, acidosis, and skin hyperpigmentation (due to MSH, a by-product of ACTH production from POMC). Characterized by Adrenal Atrophy and Absence of hormone production; involves all 3 cortical divisions (spares medulla). Distinguish from 2nd adrenal insufficiency (pituitary ACTH production), which has no skin hyperpigmentation and hyperkalemia (ADDison's = ACTH deficiency).

Waterhouse-Friderichsen syndrome

Acute 1st adrenal insufficiency due to adrenal hemorrhage associated with Neisseria meningitidis sepsisemia, DIC, and endotoxic shock.

Pheochromocytoma

Most common tumor of the adrenal medulla in adults. Derived from chromaffin cells (arise from neural crest). Most tumors secrete epinephrine, NE, and dopamine and can cause episodic hypertension. Urinary VMA (a breakdown product of norepinephrine) and plasma catecholamines are elevated. Associated with neuroblastomatosis, MEN types 2A and 2B.

Rule of 10's:
- 10% malignant
- 10% bilateral
- 10% extra-adrenal
- 10% calcified
- 10% kids
- 10% familial

Symptoms occur in "spells"—relapse and remission.
irreversible α-blocker, followed by surgery to remove the tumor.

Episodic hypertensive symptoms (5 P’s):
- Pressure (elevated blood pressure)
- Pulse (headache)
- Perpiration
- Palpitation (tachycardia)
- Pedal

Phenylethanolamine → Tyramine → L-dopa → Dopamine → Norepinephrine → Epinephrine

HVA

VMA

Metanephrine

Neuroblastoma

The most common tumor of the adrenal medulla in children. Can occur anywhere along the sympathetic chain. Homovanillic acid (HVA), a breakdown product of dopamine, elevated in urine. Less likely to develop by perinat sublime. Overexpression of N-met oncogene associated with rapid tumor progression. Age = 2. Pathology shows small blue cells, poor

Lg Opinion: no other symptoms: Attack, opsclonus, myclonus. Paraneoplastic...
Do a question in tutor mode

Read the explanation, open that section of your book

Annotate the book based on the framework

Free associate
Do practice tests in a subject

Once completed, do incorrect questions in that topic until complete

Move on to next topic until entire bank is done. Then reset and go again!
Redundancy is key
Putting it all together #2

A 32-year-old woman with type 1 diabetes mellitus has had progressive renal failure over the past 2 years. She has not yet started dialysis. Examination shows no abnormalities. Her hemoglobin concentration is 9 g/dL, hematocrit is 28%, and mean corpuscular volume is 94 μL. A blood smear shows normochromic, normocytic cells. Which of the following is the most likely cause?

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G. Polycythemia vera
H. Sickle cell disease
I. Sideroblastic anemia
J. β-Thalassemia trait

This patient is most likely suffering from anemia of chronic renal disease; a condition caused by a lack of erythropoietin. As the kidneys are damaged by any number of pathologic conditions, their ability to regulate hematopoiesis through hormone secretion becomes diminished. In end stage renal disease, erythropoietin production is so diminished that patients become anemic and often require transfusions. As this anemia is hormonally driven, the existing RBCs are usually normal in size and morphology (D).

Acute blood loss anemia (A) often presents as normochromic, normocytic anemia, but this patient gives no history of bleeding.

Polycythemia (G) can lead to anemia after longstanding bone marrow hyperactivity leading to fibrosis, but this is not a common first presentation.
Anemia of CKD

Pathogenesis
Loss of erythropoetin

Therapeutics
Transfusions prn
EPO

Clinical Presentation
Normocytic, normochromic w/ renal disease

Diagnostics
Blood smear, renal fxn
Focusing on these topics: the big 4 are important

Most are pathology
Next we’ll talk about the day to day schedule and motivation.

Percent correct matter? Nope, more opportunity to improve.

Change your answer if you want
Scheduling Strategy

1. Study timeline
2. Practice USMLE tests

Questions are the individual unit of this test and the build block of the S1M strategy
- How do I “study for the Step” with rotations?
  - QBank + FA → review ongoing topic 
    - REINFORCES, doesn’t “take away” from review!
  - Now-Jan: 3-5q/night (30min)
  - Jan-April: 5-10q/night (45-60min)

Quality>>Quantity
Entire process 4-6 weeks, assumes about two blocks of questions per day
Available on our site, which allows in depth planning of ISP based on strengths, time remaining, etc.
Expanded feedback is CRUCIAL
Talk about practice tests here.

- Take them in a quiet, alone setting just like a real test.
- Take them with timing, like a real test.
- Treat them in all ways like a real test. It’s the same material, just half the length.
Why your 3rd NBME is vital

Sub Group Analysis

<table>
<thead>
<tr>
<th>Event</th>
<th>% of Total</th>
<th>Average Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 &gt; NBME #3</td>
<td>67%</td>
<td>12</td>
</tr>
<tr>
<td>Step 1 &lt; NBME #3</td>
<td>33%</td>
<td>7</td>
</tr>
</tbody>
</table>

% of class

Point Differential

(1-5)  (6-10)  (11-15)  (16-20)  (>20)
High Yield Testing Tips

• Skip/Mark questions wisely
  – Lost, confused, scared
  – Identified as lengthy

• Use your breaks
  – Fatigue at ~ 3rd block
  – Bring snacks, drink water

• Don’t agonize over missed questions
  – Learn from mistakes
Questions are the individual unit of this test and the build block of the S1M strategy
Studying for the Step One Boards can be exhausting. When doing it for three weeks consecutively, many students risk the event known as burning out. This is when students feel as though they can no longer study anymore and lose interest in achieving their goals. This usually occurs in the setting of excessive stress and unhappiness. This tends to occur towards the end of a student’s intensive study period, usually 1-2 weeks before the test. The way to combat this is to make your Boards study period as enjoyable as possible. You should make sure that you make time weekly to go out with friends, and do enjoyable activities that make you who you are. If you go to church every week, make sure you continue to go to church. If you go to the gym every day, make sure that you reserve time in your schedule to go to the gym. With effective planning and prioritization, you can fit all of these things into your schedule and still get a maximum amount of work done.

It is important to understand that you will not be effective if you are not happy. The Boards study period is the first time in your medical career where you get to completely dictate your entire schedule. You should see this as a great opportunity to strike optimal balance between getting as much work done while keeping yourself happy and healthy.

To avoid burnout on a daily basis, make sure that you take frequent 15 minute breaks every two hours or so. This allows you to remain mentally fresh, and ensure that the material you are learning is being retained.

A potential source of unhappiness and stress that results in the burnout is the feeling of isolation. Students often make the mistake of secluding themselves during the intensive study period and not interacting with other students. This is the wrong way to go about. Although you should spend a majority of your time studying and learning from questions on your own, you should frequently interact with your friends and classmates on a regular basis. By creating a support network with your classmates and colleagues, you are less likely to feel as though you are going through stressful process alone. Strength in numbers and misery loves company are two sayings that are appropriate to describe this phenomenon. When convenient, you should try to take break time and eat meals with friends and classmates to chat and discuss board topics that you have seen frequently.
Let’s Slow Down for a Bit...

| **Show Up** | • Every day is a good day |
| **Don’t Rush** | • Do the small things |
| **Learn from Mistakes** | • Don’t Live Them |
| **Believe** | • If you put in the work, results will come |
Questions?

Login to www.step1method.com

Follow & Attend Webinars

Practice these techniques daily

THANK YOU... see you next time!