



Balancing & Integrating USMLE Prep with Pre-clinical Medical Education: Lessons Learned

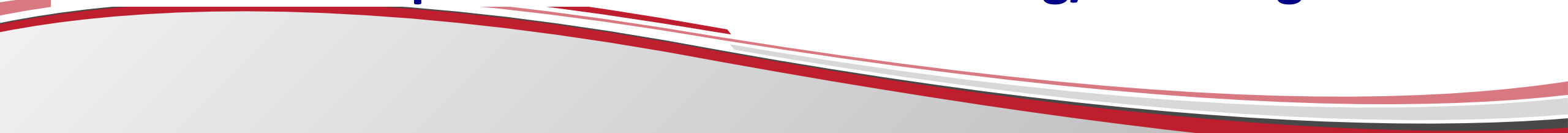


ELITE MEDICAL PREP

**MEDICAL EDUCATION GRAND
ROUNDS
University of Hawai'i JABSOM**

Delivered: April 14th, 2020

At the end of this presentation, the participants should be able to:

- **Discuss examples of strategies utilized at other medical schools to assist students with preparing for USMLE 1.**
 - **Discuss the role of optimized timing of focussed USMLE Reviews for medical students**
 - **Discuss best practices of online tutoring/teaching**
- 

USMLE Goals: Schools vs Students



Soccer



Basketball



USMLE Goals: Schools vs Students



Disclosures & My Background

Elite Medical Prep Founders



Marcel Brus-Ramer, MD/PhD

Co-founder and President

Board Certified Radiologist
Columbia P&S Online Lecturer

Kenneth Rubin, MD

Co-founder and CEO

Mt Sinai USMLE Step 1
and Step 2 CK Course
Director

Columbia University | UCSF |
Rutgers | Paris Diderot



Mt. Sinai | Columbia University

Individual & Group Based Medical Education



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



Small Group Tutoring

Elite Medical Prep runs an integrated small group tutoring program for institutions that has produced outstanding results at ***Technion Medical School***.



Seminar Presentations

Elite Medical Prep delivers highly interactive seminars across different high-yield USMLE topics. Integrated material is presented in the same interactive format used in our board review courses at ***Mt. Sinai Medical School***.



Faculty Development

Elite Medical Prep has developed a unique intensive system for training its tutors. Our team works directly with medical schools to train their faculty & top students in the best methods for peer tutoring.

Elite Medical Prep Founders



Marcel Brus-Ramer, MD/PhD

Co-founder and President

Board Certified Radiologist
Columbia P&S Online Lecturer

Columbia University | UCSF |
Rutgers | Paris Diderot

Kenneth Rubin, MD

Co-founder and CEO

Mt Sinai USMLE Step 1
and Step 2 CK Course
Director

Mt. Sinai | Columbia University



Individual & Group Based Medical Education



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



Small Group Tutoring

Elite Medical Prep runs an integrated small group tutoring program for institutions that has produced outstanding results at *Technion Medical School*.

Core services in 1:1 tutoring

- Developed as a natural outgrowth of work in pre-college & pre-medical tutoring
- Small group tutoring aims to take the best of 1:1 and make it more affordable

Our Tutoring Team



- Current & former medical students
- Recently taken these exams
- High scorers: all tutors scored >245
- Tutored professionally for these exams
- Active in education & academic medicine
- Some practicing physicians

SAT to USMLE: Experiences with tutoring

- > 20 years of 1-on-1 tutoring experience across high stakes standardized testing
 - **Pre-college** SAT, ACT, SAT II
 - **College** MCAT, GRE
 - **Medical** USMLE Step 1, 2 CK, 3. Shelf Exams, ABIM
- High stakes MCQ exams have growing importance
- Many tests require separate skills for student to master.
 - ◆ Content Expert and a Test Expert are not necessarily the same thing
- **Instructors for these exams also may need to develop new skills & tools**



1-on-1 Tutoring: Emphasizing Socratic Style



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



USMLE Practice Question

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured. Which of the following sets of findings is most consistent with the patient's condition?



	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑
F)	↑	↑	↓

USMLE Practice Question

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured. Which of the following sets of findings is most consistent with the patient's condition?



	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑
F)	↑	↑	↓

1-on-1 Tutoring Best Practices



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



ON-BOARDING

- Detailed consultation prior to tutoring
- Efficient student-tutor pairing process
- Trial session
- Student feedback early & late

TRACKING

- Post-session emails to document
- Detailed tutor evaluation (initial)

TUTORING/TEACHING CONTENT

- Online notes & worksheet
- High quality materials specialized for tutoring

1-on-1 Tutoring Best Practices



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



TRACKING



TUTORING/TEACHING CONTENT

ON-BOARDING

- Detailed consultation prior to tutoring
- Efficient student-tutor pairing process
- Trial session
- Student feedback early & late

1-on-1 Tutoring Best Practices



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



[postsession] Post-session email 4/14/2020

Boomerang this? the day before Apr 17, 2020 5:30PM Confirm

Alexandra Rzepecki MD
to Jacob, Post

4:44 PM (14 minutes ago)

Hi Jacob!
On 4/14/20, we completed 1 hour of tutoring for your USMLE Step 1 exam.

Tutor hours remaining: 19.25

Topics reviewed: Neuro, UWorld questions

Next session: Friday April 17th from 5:30-6:30am EST, then 2 hours on Saturday April 18th

Assignment: continue doing UWorld questions daily, watching Sketchy and Pathoma videos to supplement, reviewing your Anki cards

Score on your last practice tests: 172 on NBME 20 on 3/31/20

Next practice test: TBD

Your USMLE Step 1 exam: May 27, 2020

Another great neuro session—I can definitely see your knowledge base improving! We'll do one more neuro session together (or another topic if you prefer), and move on to doing biostats on Saturday.

Here is the link to the biostats videos I mentioned during our session today from OnlineMedEd. They are succinct and very helpful. I highly encourage you to watch them prior to starting your biostats questions!

Alexandra Rzepecki, MD



ON-BOARDING

- Detailed consultation prior to tutoring
- Efficient student-tutor pairing process
- Trial session
- Student feedback early & late

TRACKING

- Detailed tutor evaluation (initial)
- Post-session emails for every session
 - Documents material coverage, HW, emerging issues
 - Use S-O-A-P note format

TUTORING/TEACHING CONTENT

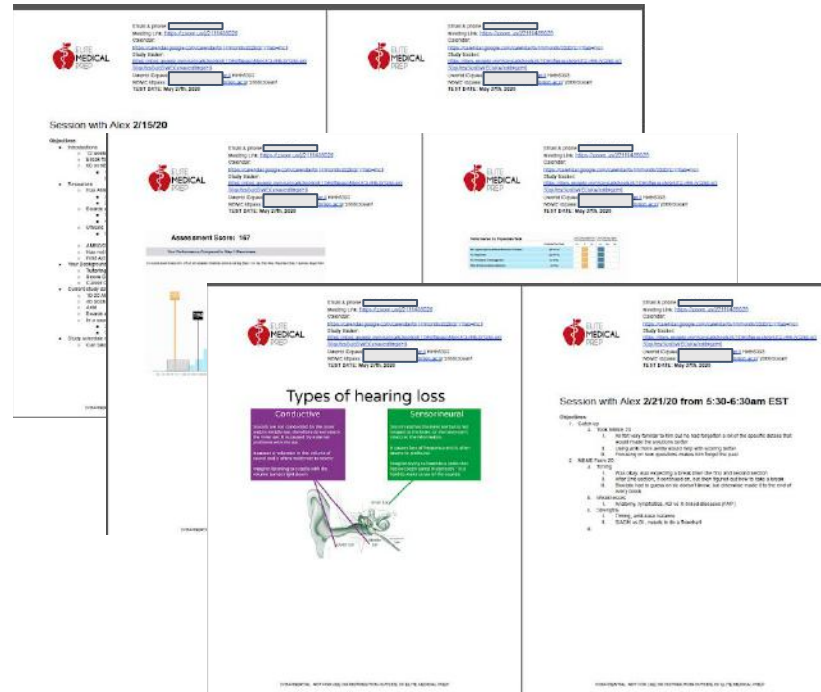
- Online notes & worksheet
- High quality materials specialized for tutoring

1-on-1 Tutoring Best Practices



1-on-1 Tutoring

Elite Medical Prep tutors have been providing the highest level of medical tutoring since 2009. We have developed a 'Structured Personalization' system that ensures consistently high impact tutoring sessions.



ON-BOARDING

- Detailed consultation prior to tutoring
- Efficient student-tutor pairing process
- Trial session
- Student feedback early & late

TRACKING

- Detailed tutor evaluation (initial)
- Post-session emails for every session
 - Documents material coverage, HW, emerging issues
 - Use S-O-A-P note format

TUTORING/TEACHING CONTENT

- Online notes & worksheet
 - Available to student, tutor & quality control
- High quality materials specialized for tutoring

Small Group Based Medical Education



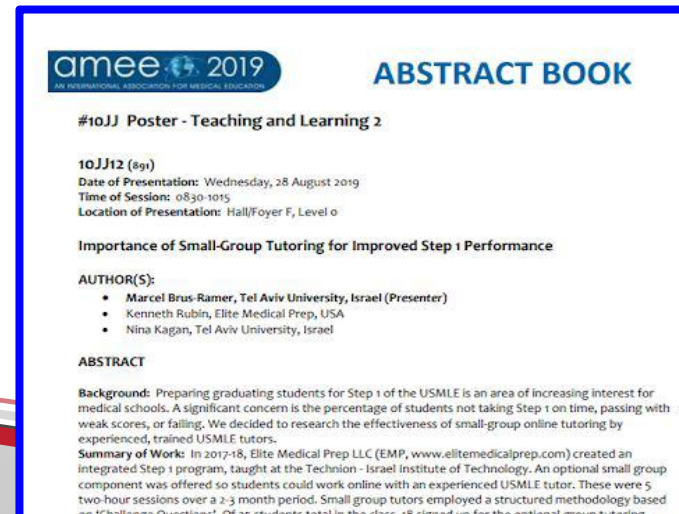
Small Group Tutoring

Elite Medical Prep runs an integrated small group tutoring program for institutions that has produced outstanding results at **Technion Medical School**.



Small group tutoring is effective

- Currently completed 3rd year of structured small group tutoring
- Improved on-time test taking. Increased average score
- Adaptations: Started small groups earlier
 - beginning of 2nd year
 - utilized flipped classroom concept



Technion: Experiences with Lectures & Small Group



- Technion American Medical School
 - ◆ Small US style med school (~35 students/year) embedded w/in a major Israeli medical school & university
 - ◆ Many students w/background of weak MCAT scores
 - ◆ **Problems:** students delaying Step 1; some failing Step 1
- EMP Intervention was small group w/linked introductory lectures
 - ◆ Small groups run by experienced tutors
- Subsequent years: earlier start of small group intervention was requested.

Individual & Group Based Medical Education



Icahn School
of Medicine at
Mount
Sinai

- 3 wk Step 1 Course
- 2 wk Step 2 Course



- 1 wk Step 1 Course
- Small group component starting in 2020-21



- 2 day mini-courses-Dec & Jun
- Distributed lectures in prior years



Seminar Presentations

Elite Medical Prep delivers highly interactive seminars across different high-yield USMLE topics. Integrated material is presented in the same interactive format used in our board review courses at **Mt. Sinai Medical School**.

Pre-learning component

Case #1

A 29 year old male attorney at a large private law firm is brought to the emergency department 1 hour after the onset of severe non-radiating substernal chest pain. He has not had any other symptoms or previous episodes of pain. There is no personal or family history of serious illness. He takes no medications.

Case #2

A 64 year old woman is admitted to the hospital with an infection. At the time of admission, she has no physical and no murmur is detected. Two days later, she becomes tachypneic and diaphoretic. Her pulse is 110/min, respirations are 20/min, and blood pressure is 90/50 mm Hg. Crackles are heard bilaterally fields on auscultation of the chest. A murmur is heard on echocardiography confirm severe mitral regurgitation.

Case #3

A 68 year old man comes to the physician because of a decreased exercise tolerance and shortness of breath that he sleeps better if he sits upright in bed. He has a pulse is 92/min, respirations are 22/min, and blood pressure is 120/80 mm Hg. There is a grade 3/6 systolic murmur that is best heard at the left sternal border, intensity increases when he stands from a supine position.

Case #4

A 37 year old man is brought to the emergency department after an episode of syncope while jogging. On arrival, he is alert and conversant. He has a history of fatigue, dyspnea, decreased exercise tolerance, and a decreased ejection fraction. His blood pressure is 140/84 mm Hg. There is a grade 3/6 systolic murmur that is best heard at the left sternal border, intensity increases when he stands from a supine position.

Case #5

A 43 year old woman has congestive cardiomyopathy and pitting edema. Her serum BUN is 25 mg/dL, and serum creatinine concentration is 1.8 mg/dL. Furosemide therapy is started. Five days later, laboratory studies show:

Serum	Urine
Na ⁺ 132 mEq/L	Specific gravity 1.023
Cl ⁻ 101 mEq/L	RBC 0/hpf
K ⁺ 3.8 mEq/L	WBC 0/hpf
HCO ₃ ⁻ 22 mEq/L	Sediment none
Urea nitrogen 14 mg/dL	
Glucose 98 mg/dL	

Echocardiography shows left and right ventricular end-diastolic decrease in systolic dysfunction.

Case #6

A 46 year old woman with type 2 diabetes mellitus comes to the physician for a follow up examination. She currently takes no medications, and her condition is being treated with diet. Blood pressure is 135/81 mm Hg, pulse is 70/min, and BMI is 31 kg/m². Physical examination shows no abnormalities. Laboratory studies show a hemoglobin A_{1c} of 7.3% (N < 5.6%), serum creatinine 1.0 mg/dL, and serum potassium 4.1 mEq/L. Urinalysis reveals positive urine albumin without hematuria or casts.

Individual & Group Based Medical Education



Icahn School
of Medicine at
**Mount
Sinai**

- 3 wk Step 1 Course
- 2 wk Step 2 Course



School of
MEDICINE

- 1 wk Step 1 Course
- Small group component starting in 2020-21



Medical School
for International Health
Ben-Gurion University of the Negev

- 2 day mini-courses-Dec & Jun
- Distributed lectures in prior years



Seminar Presentations

Elite Medical Prep delivers highly interactive seminars across different high-yield USMLE topics. Integrated material is presented in the same interactive format used in our board review courses at **Mt. Sinai Medical School**.

Mt Sinai: Creating a Question Based Course

- Over 3 years, converted didactic review to interactive Q-based course
 - ◆ Multi-part cases adapted from tutoring curriculum
- Designed to accommodate in-person attendees and those watching recordings
- Plans to split and shift the course timing
 - ◆ Some percentage of the course content may be moved earlier in the academic year
 - ◆ Key takeaway: Students want integrative reviews earlier

Individual & Group Based Medical Education



Icahn School
of Medicine at
**Mount
Sinai**

- 3 wk Step 1 Course
- 2 wk Step 2 Course



School of
MEDICINE

- 1 wk Step 1 Course
- Small group component starting in 2020-21



Medical School
for International Health
Ben-Gurion University of the Negev

- 2 day mini-courses-Dec & Jun
- Distributed lectures in prior years



Seminar Presentations

Elite Medical Prep delivers highly interactive seminars across different high-yield USMLE topics. Integrated material is presented in the same interactive format used in our board review courses at **Mt. Sinai Medical School**.

UNLV: Optimizing the timing of interventions

- UNLV SOM uses hybrid preclinical curriculum--1.5 yrs
 - ◆ 1 wk review course during dedicated study period
- USMLE Review Course customized on short notice
 - ◆ Very positive student feedback
 - ◆ However, near uniform request to have earlier in the academic year.
- Planned revisions for next course
 - ◆ 1 wk course to be moved back 1-2 months earlier
 - ◆ Small group tutoring supplement for at-risk students

Individual & Group Based Medical Education



Icahn School
of Medicine at
**Mount
Sinai**

- 3 wk Step 1 Course
- 2 wk Step 2 Course



School of
MEDICINE

- 1 wk Step 1 Course
- Small group component starting in 2020-21



Medical School
for International Health
Ben-Gurion University of the Negev

- 2 day mini-courses-Dec & Jun
- Distributed lectures in prior years



Seminar Presentations

Elite Medical Prep delivers highly interactive seminars across different high-yield USMLE topics. Integrated material is presented in the same interactive format used in our board review courses at **Mt. Sinai Medical School**.

BGU: Split Mini-Courses



BGU MSIH

- ◆ English language program at an Israeli medical school
- ◆ Created 2 mini courses of several days length



Mini-course Part 1

- ◆ Very positive student feedback
- ◆ However, near uniform request for integrative course earlier in the academic year.
- ◆ Part 2 online in June



Planned revisions for next course version

- ◆ Part 1 & Part 2 started earlier in 2nd year.
- ◆ Small group tutoring supplement for at-risk students

Individual & Group Based Medical Education



Icahn School
of Medicine at
**Mount
Sinai**

- 3 wk Step 1 Course
- 2 wk Step 2 Course



School of
MEDICINE

- 1 wk Step 1 Course
- Small group component starting in 2020-21



Medical School
for International Health
Ben-Gurion University of the Negev

- 2 day mini-courses-Dec & Jun
- Distributed lectures in prior years

COVID-19 QUARANTINE

Adaptations to Travel and Meeting Restrictions

- ★ Mt Sinai course--live in-person canceled.
- ★ Course converted to online
 - delivery via Zoom
- ★ Step 1 Course
 - Maintain timing & organization
- ★ Step 2 CK Course
 - Earlier start, more recording oriented for asynchronous viewing



Seminar Presentations

Elite Medical Prep delivers highly interactive seminars across different high-yield USMLE topics. Integrated material is presented in the same interactive format used in our board review courses at **Mt. Sinai Medical School**.



- ★ Much **greater tutor involvement** in both courses

Our Team

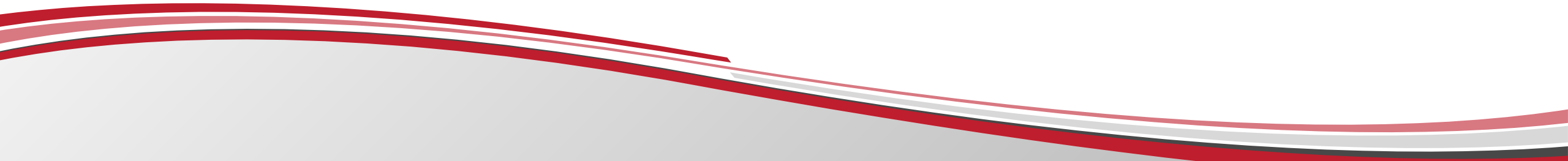


- Current & former medical students
- Recently taken these exams
- High scorers: all tutors scored >245
- Tutored professionally for these exams
- Actively interested in education & academic medicine
- Some practicing physicians



USMLE Question Example

Presented on 1/31/20 to Jefferson 2nd years



USMLE Practice Question

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured. Which of the following sets of findings is most consistent with the patient's condition?



	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑
F)	↑	↑	↓

Live Polling at:

www.pollev.com/smartland010

PART B: Which of the following sets of findings is most consistent with the patient's condition?

A

B

C

D

E

F



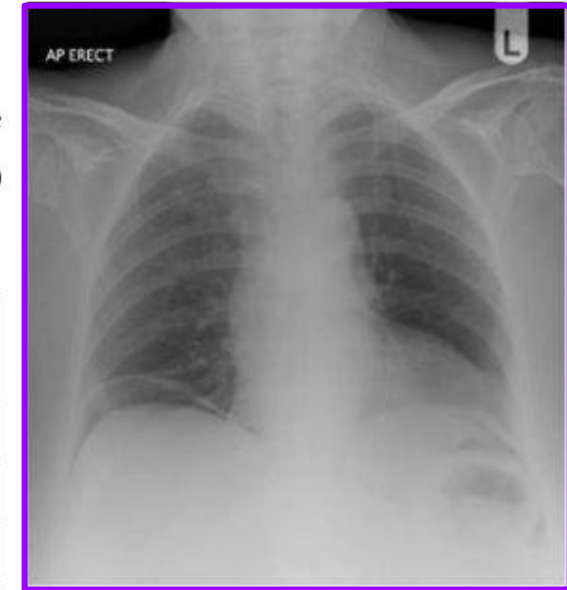
Multiple Challenges in One Question

Multi-step question that assumes understanding of the diagnosis

Clinical vignette with multiple lines of clinical history and data

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured. Which of the following sets of findings is most consistent with the patient's condition?

Radiographic imaging



Testing application of core physiology concepts

	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑
F)	↑	↑	↓

Answers in table format with up/down answer choices

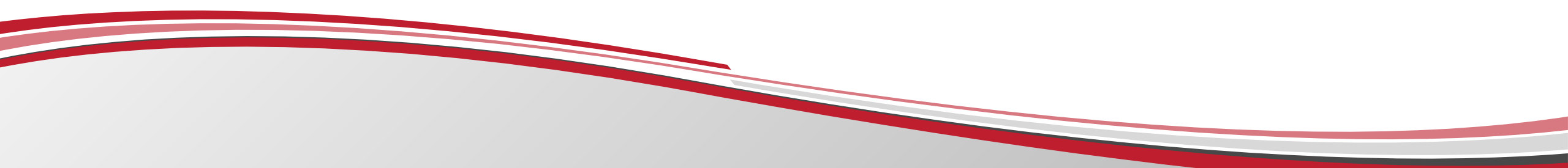
Live Polling

Live Polling at:

www.pollev.com/smartland010

USMLE Style Questions:

From great challenges come stronger learning

- Good use of USMLE Questions can lead to better retention of material and lead to great lessons
 - USMLE Step 1 questions pose significant cognitive challenges to students but also can help set learning expectations
 - Questions can also demonstrate the context and application of the material students are learning
 - Lectures and small groups/PBL, etc.
 - Integrating USMLE Questions into teaching helps maintain student engagement.
- 

USMLE Practice Question Breakdown

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured.

1 Which of the following sets of findings is most consistent with the patient's condition?

	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑



USMLE Practice Question Breakdown

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured.



1 Which of the following sets of findings is most consistent with the patient's condition?

	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑

USMLE Practice Question Breakdown

3 A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured.

1 Which of the following sets of findings is most consistent with the patient's condition?

2

	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑



USMLE Practice Question Breakdown

- 3 A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured.
- 4
- 1 Which of the following sets of findings is most consistent with the patient's condition?



2

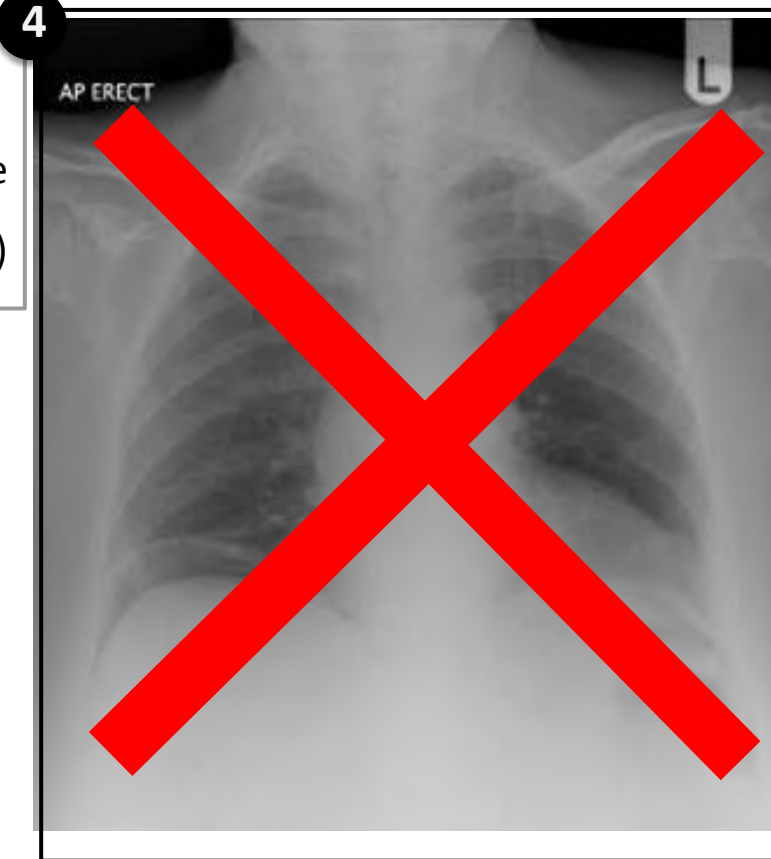
	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓	no change	↑
C)	↓	↑	↑
D)	↓	↓	↑
E)	no change	no change	↑

USMLE Practice Question Breakdown

3 A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured.

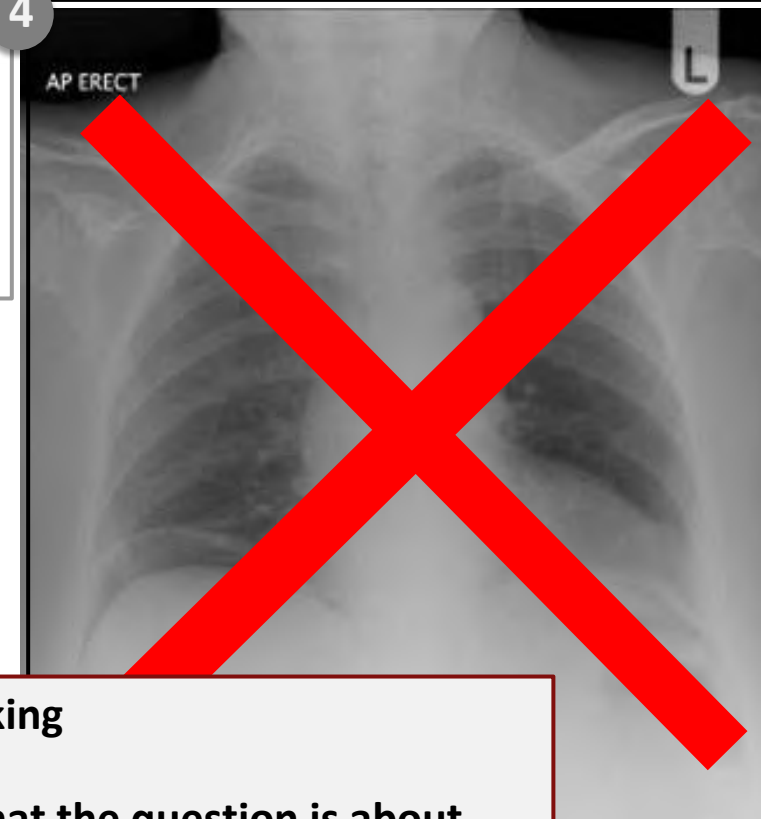
1 Which of the following sets of findings is most consistent with the patient's condition?

2		Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
	A)	↑	↓	↓
	B)	↓	no change	↑
	C)	↓	↑	↑
	D)	↓	↓	↑
	E)	no change	no change	↑



USMLE Practice Question Breakdown

- 3 A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief. The vital signs of the patient are T 35.6C (96F), pulse 110/min, and blood pressure 80/55 mm Hg. Physical examination shows marked pallor. Laboratory studies show a hemoglobin concentration of 6 g/dL and hematocrit of 18%. A chest x-ray is obtained (shown) and a pulmonary catheter is inserted and laboratory values are measured.
- 4
- 1 Which of the following sets of findings is most consistent with the patient's condition?



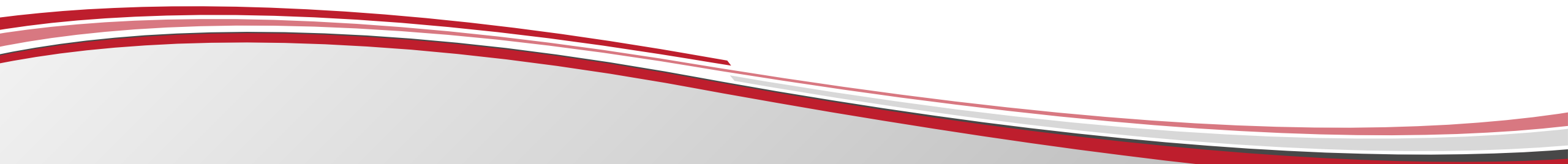
2

	Cardiac Output	Pulmonary capillary wedge pressure	Systemic vascular resistance
A)	↑	↓	↓
B)	↓		
C)	↓		
D)	↓		
E)	no change		

- 1 The question stem – tells you what the question is asking
- 2 The answer choices – gives you some context as to what the question is about
- 3 The prompt – highlight three important pieces of information; summarize in your own words the key information as it's given; ensure that the answer matches ALL of the information given, not just some
- 4 Labs and images – EVAL the labs. IGNORE the images.

EMP's SUGGESTED ORDER.
There is no one right way to do this.

Question Extensions



Part B

A patient in the early stages of hemorrhagic shock is most likely to have which of the following?

- A) Decreased myocardial contractility
- B) Decreased renal sympathetic nerve activity
- C) Flushing due to cutaneous vasodilation
- D) Increased delivery of sodium to the macula densa
- E) Increased renal blood flow due to sympathetic activation
- F) Increased ventilatory rate due to tissue ischemia**
- G) Sweating due to parasympathetic stimulation of sweat glands

Part C

In a patient who is hemorrhaging, which of the following is an adaptive response that helps to maintain mean arterial pressure?

- A) Decreased end-diastolic volume
- B) Increased end-systolic volume
- C) Increased venous compliance
- D) Inhibition of secretion of ADH (vasopressin)
- E) A fluid shift from interstitial to vascular compartments
- F) Release of atrial natriuretic peptide

Part D

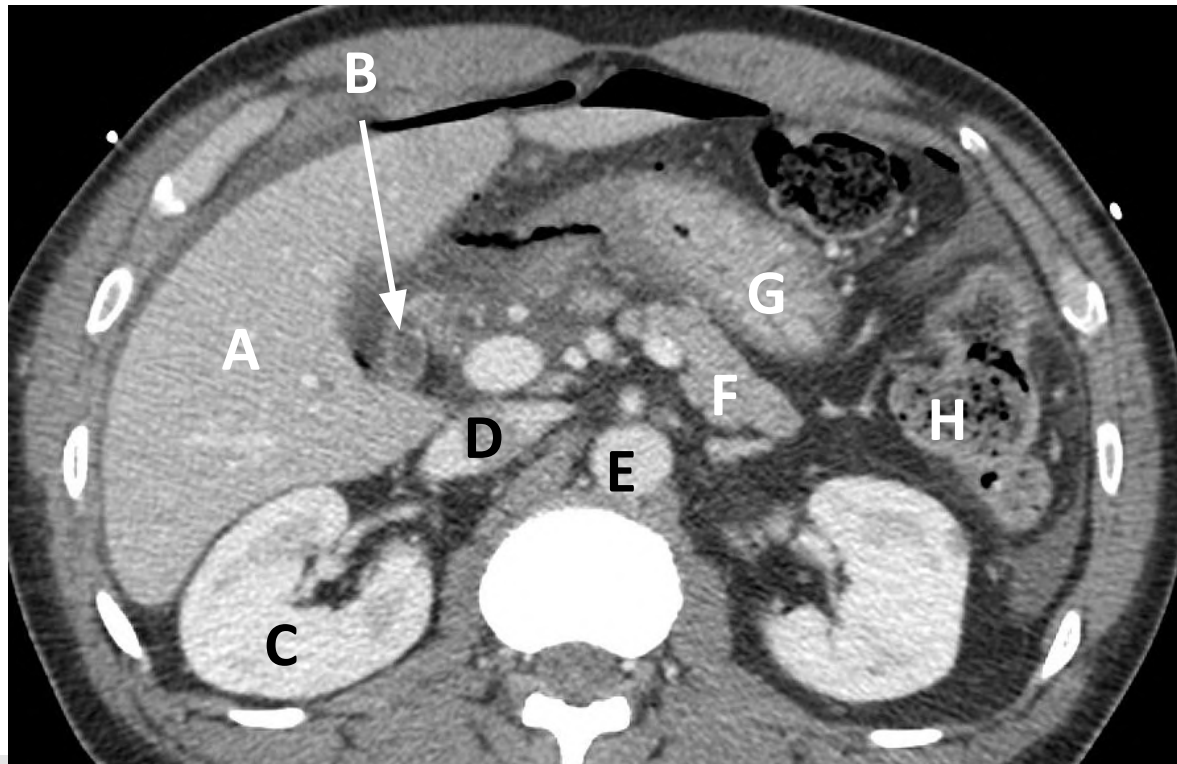
In a patient who is hemorrhaging, which of the following changes in body fluid volume or osmolality is most likely seen?

	Intracellular		Extracellular	
	Volume	Osmolality	Volume	Osmolality
A)	No change	No change	↓	No change
B)	↓	↑	↓	↑
C)	↑	↓	↓	↓
D)	No change	No change	↑	No change
E)	↓	↑	↑	↑
F)	↓	↓	↑	↓

Part E

After the patient's blood pressure and volume status are stabilized, she is scheduled to undergo surgery to treat the likely source of hypovolemia and free intra-abdominal air. Immediately prior to going to the operating room, a CT of the abdomen and pelvis is performed to assist with surgical planning. Which of the following structures on the axial CT image through the abdomen is the likely source of the free air and associated hypovolemia?

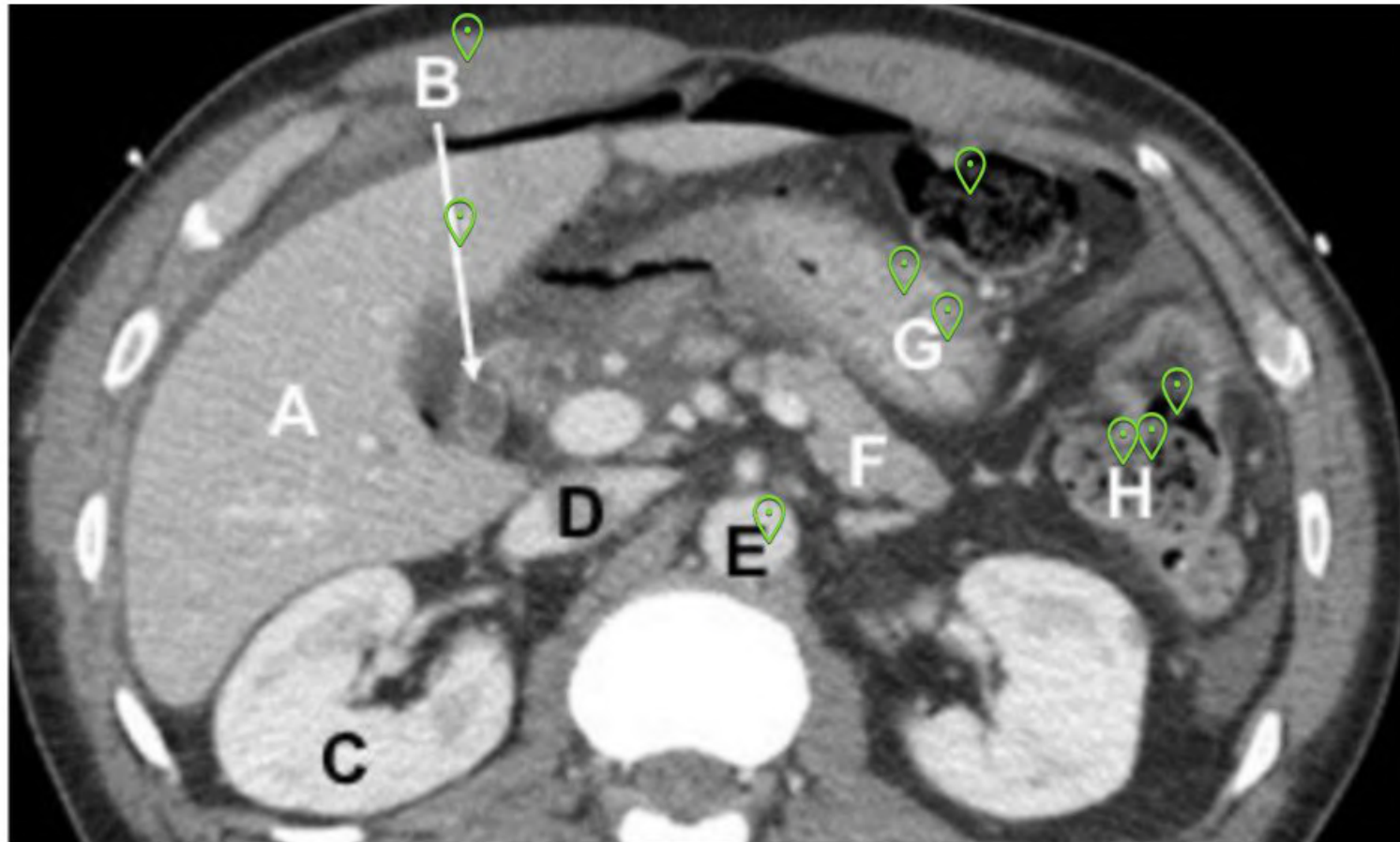
- A.
- B.
- C.
- D.
- E.
- F.
- G.



RECALL

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had severe heartburn for 3 months; treatment with over-the-counter antacids has provided some relief.

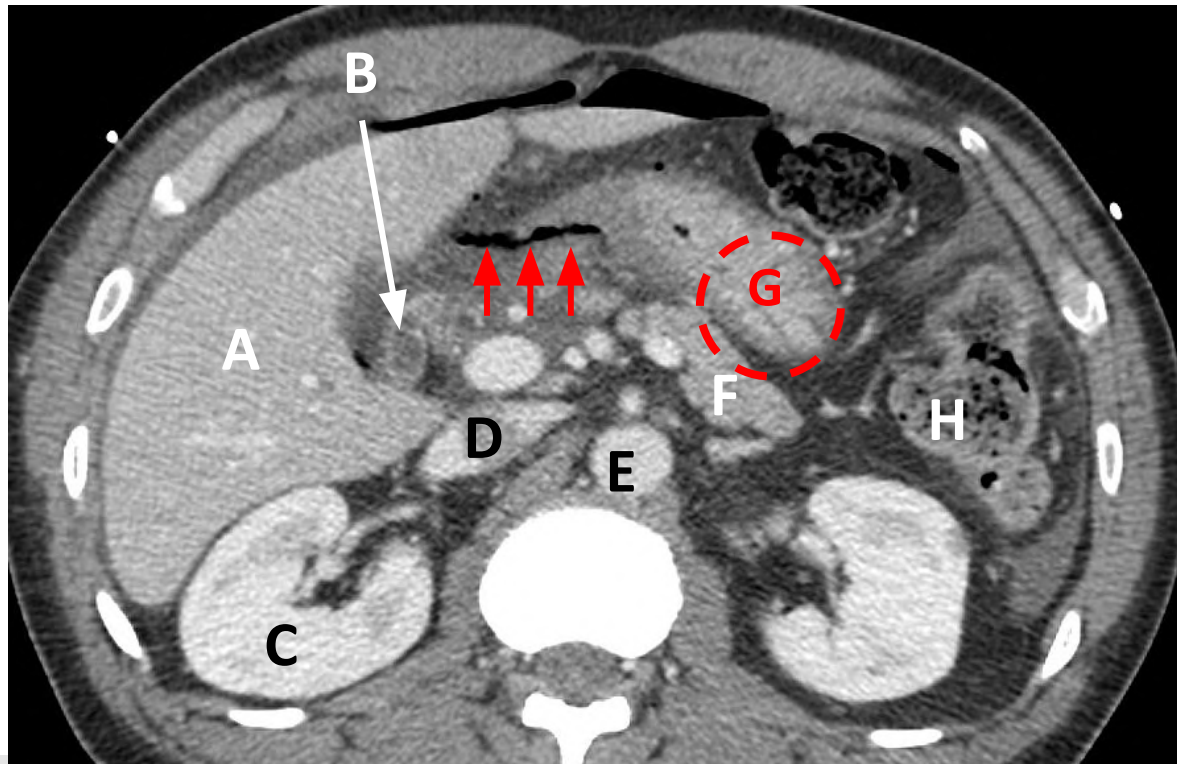
PART E: Which of the following structures on the axial CT image through the abdomen is the likely source of the free air and associated hypovolemia?



Part E

After the patient's blood pressure and volume status are stabilized, she is scheduled to undergo surgery to treat the likely source of hypovolemia and free intra-abdominal air. Immediately prior to going to the operating room, a CT of the abdomen and pelvis is performed to assist with surgical planning. Which of the following structures on the axial CT image through the abdomen is the likely source of the free air and associated hypovolemia?

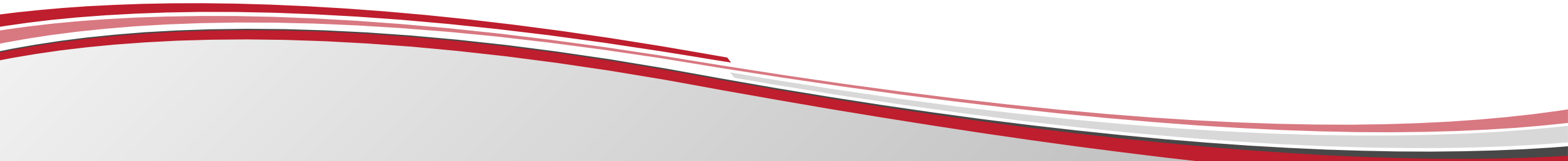
- A.
- B.
- C.
- D.
- E.
- F.
- G.



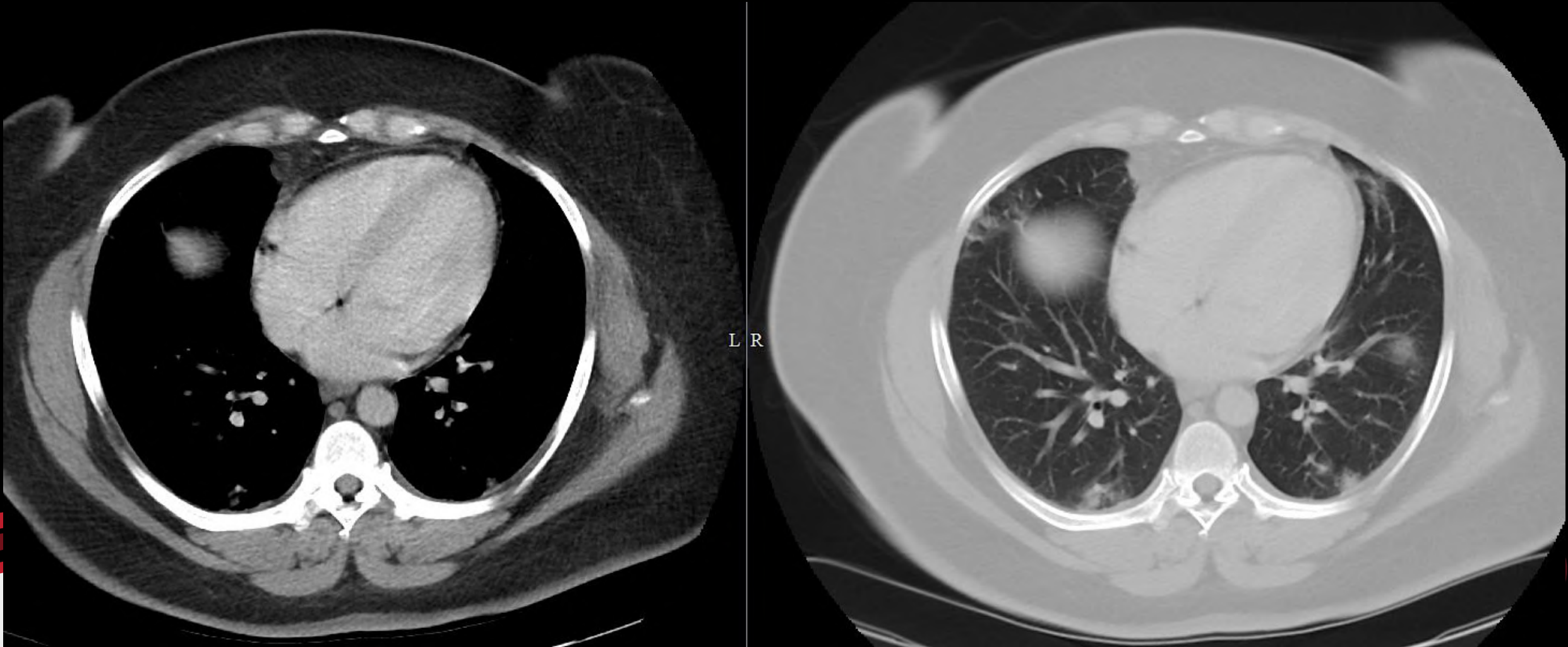
RECALL

A 26 year old woman is brought to the emergency department by her roommate because of vomiting for 4 hours. She also has a 2 day history of fatigue and dizziness on standing. She has had pain with eating for 3 months; treatment with over-the-counter antacids has provided some relief.

Additional Question Polling Example



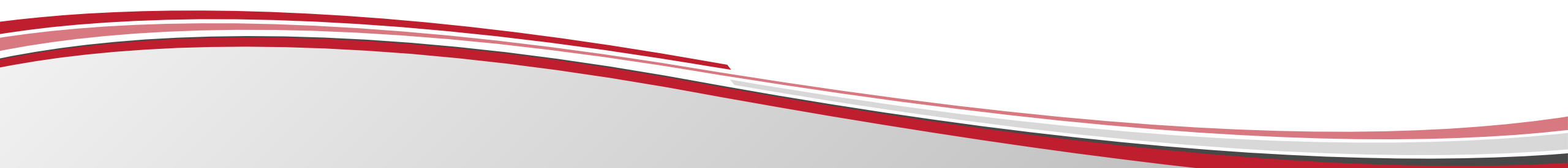
COVID-19 Radiology Webinar for Medical Students



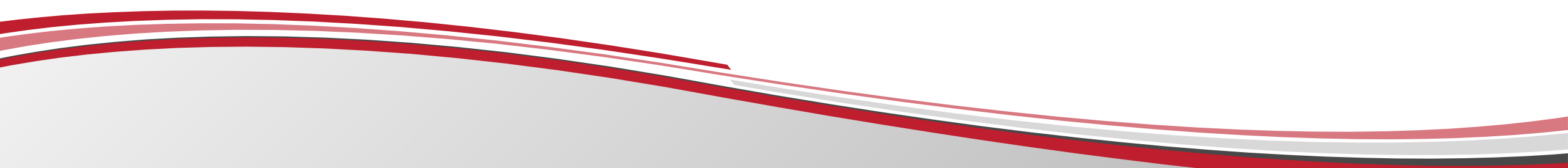
COVID Radiology Webinar



Summary of USMLE Experiences

- USMLE will remain a major part of pre-clinical medical education for the foreseeable future
 - Students respond well to interactive question-based review
 - ◆ Either in large group or small group format
 - Earlier interventions seems increasingly important to students
 - USMLE review can be complementary and integrated into existing medical school curriculum
 - USMLE review may require separate skill set for educators vs traditional medical school curriculum
- 

Summary of Online Best Practices

- 1:1 and small group tutoring naturally adapt to online format
 - ◆ Tracking is key to ensuring adherence & identifying problems
 - ◆ Structured materials improve session to session quality
 - ◆ Small group size cap at 5 students
 - Large courses can function well in online format
 - ◆ Polling serves as important feedback mechanism
 - ◆ Pre-learning component helpful
 - ◆ Question difficulty variety important to maintain interest
 - ◆ Prepare material to accommodate live and asynchronous audiences
- 

Thank you

Questions?

marcel@elitemedicalprep.com

ken@elitemedicalprep.com

