<u>Instructions</u>: Please review this first example case carefully before answering the questions 1-64 (Q1-64) below. Each case stem is associated with 4 questions (ie. Q1-Q4) in the table below the stem. Each question below the case stem should be answered independently, without considering the information revealed in the other 3 questions in the table. (i.e. Q1 in the example case is a separate question from Q2 and Q3 -- for Q1 you should not consider the findings of epigastric tenderness or +nitrites/ +leukocyte esterase mentioned in Q2/Q3)

Example Case Stem:

A 23 year old F presents with lower abdominal cramping with vomiting for 1 day. Her pregnancy test is negative. She has no other symptoms.

If you were thinking of	And then you were to	you would then
the usefulness of the	find	consider the
following investigation		investigation
Q1 Pelvic exam	She is not sexually active	-2 <mark>-1</mark> 0 +1 +2
Q2 Abdominal CT	She has mid epigastric	<mark>-2</mark> -1 0 +1 +2
	tenderness	
Q3 Transvaginal	She has +nitrites and	-2 <mark>-1</mark> 0 +1 +2
ultrasound	+leukocyte esterase on her	
	urine dipstick	

Investigative option:
-2: useless
-1: less useful
0: neither more nor less
useful
+1: useful
+2: very useful

The Likert scales are defined next to the question table and are different for each case and set of questions. Please circle your answer on each Likert scale in the third column of the table.

Testing begins with Case 1 below:

Case 1: 50M with morbid obesity who works as a long range truck driver presents with a chest pain and a heart rate of 110 beats per minute, blood pressure of 135/78, oxygen saturation of 93% on room air.

If you were considering	and the following new	you would then
the risk-benefit ratio of	information were to	consider the
the following	become available	treatment
treatment		
Q1 IV heparin	EKG with sinus tachycardia	-2 -1 0 +1 +2
	otherwise normal	
Q2 IV heparin	Oxygen saturation drops	-2 -1 0 +1 +2
	further to 85% on room air	
Q3 Tissue Plasminogen	US Doppler study of lower	-2 -1 0 +1 +2
Activator (tPA)	extremity shows a deep	
	vein thrombosis	
Q4 Tissue Plasminogen	Patient's blood pressure	-2 -1 0 +1 +2
Activator (tPA)	drops to 93/60 and	
	improves to 113/70 with 1L	
	normal saline bolus	

Treatment option:
-2: strongly
contraindicated
-1: contraindicated
0: neither more nor less
indicated
+1: indicated
+2: strongly indicated

Case 2: 55F with a BMI of 34 who presents with intermittent abdominal and substernal chest pain for the past 3 days. She has a history of acid reflux disease, cholelithiasis, and diabetes. She is afebrile, blood pressure is 155/80, heart rate is 80 beats per minute, and oxygen saturation is 98% on room air.

If you were thinking of the following diagnosis	and the following new information were to become available	this diagnosis would become
Q5 Acute myocardial infarction	ST wave depression on 12 lead EKG	-2 -1 0 +1 +2
Q6 Acute myocardial infarction	Q waves on 12 lead EKG	-2 -1 0 +1 +2
Q7 Acute myocardial infarction	Symptoms improve slightly with GI cocktail (viscous lidocaine and Maalox)	-2 -1 0 +1 +2
Q8 Acute myocardial infarction	Symptoms are relieved with sublingual nitroglycerin	-2 -1 0 +1 +2

Diagnosis option:
-2: very unlikely
-1: unlikely
0: neither likely nor
unlikely
+1: more likely
+2: very likely

Case 3: 70F with COPD and new onset shortness of breath and substernal chest pain. She has a history of diabetes and her blood pressure is 110/70, pulse rate of 100 bpm, respiratory rate of 30, oxygen saturation is 92% on room air, and temperature is 99.2° F.

If you were thinking of the following diagnosis	and the following new information were to become available	this diagnosis would become
Q9 Pulmonary embolism	Thrombosis in the greater saphenous vein	-2 -1 0 +1 +2
Q10 Pneumothorax	Diminished breath sounds bilaterally	-2 -1 0 +1 +2
Q11 Pneumonia	Presence of bands on complete blood count	-2 -1 0 +1 +2
Q12 COPD exacerbation	Diminished breath sounds bilaterally	-2 -1 0 +1 +2

Diagnosis option:
-2: very unlikely
-1: unlikely
0: neither likely nor
unlikely
+1: more likely
+2: very likely

Case 4: 65 y/o F presents with substernal chest pain and shortness of breath for 1 hour. She has a history of type II diabetes mellitus, congestive heart failure and tobacco use. Blood pressure is 155/70, HR is 90.

If you were thinking of the following diagnosis	and the following new information were to become available	this diagnosis would become
Q13 Congestive heart failure exacerbation	EKG with new left bundle branch block	-2 -1 0 +1 +2
Q14 Pulmonary embolism	Crackles in her lungs bilaterally	-2 -1 0 +1 +2
Q15 Acute myocardial infarction	EKG with new T wave inversions in leads V4-V6	-2 -1 0 +1 +2
Q16 Pneumonia	Clear lung sounds bilaterally	-2 -1 0 +1 +2

Diagnosis option:
-2: very unlikely
-1: unlikely
0: neither likely nor
unlikely
+1: more likely
+2: very likely

Case 5: 65 y/o F with a history of CAD and type II diabetes mellitus presents with 5/10 pressure-like left-sided chest pain for 1 day.

If you were considering	and the following new	you would then
the usefulness of the	information were to become	consider the
following	available	investigation
investigation		
Q17 Chest ray	Clear lungs bilaterally	-2 -1 0 +1 +2
Q18 ECG	Hypotension and diaphoresis	-2 -1 0 +1 +2
Q19 Troponin	Pain relief with nitroglycerin	-2 -1 0 +1 +2
Q20 Troponin	Pain with inspiration	-2 -1 0 +1 +2

Investigative option:
-2: useless
-1: less useful
0: neither more nor less
useful
+1: useful
+2: very useful

Case 6: A 45 y/o F with a history of CAD, hypertension, and COPD presents with shortness of breath and chest pressure.

If you were considering the	and the following	you would then
utility of the following	information were to	consider this
treatment	become available	treatment
Q21 Duoneb (ipratropium	Crackles on pulmonary	-2 -1 0 +1 +2
bromide/albuterol)	exam	
nebulizer and IV solumedrol		
(methylprednisolone)		
Q22 IV Heparin	An elevated BNP	-2 -1 0 +1 +2
Q23 Cardiac catheterization	A normal troponin	-2 -1 0 +1 +2
Q24 IV Heparin	Pain worsens with	-2 -1 0 +1 +2
	exertion	

Treatment option:
-2: useless
-1: less useful
0: neither more nor less
useful
+1: useful
+2: very useful

Case 7: A 75 y/o F with heart failure presents with severe shortness of breath and chest pressure with worsening bilateral lower extremity edema for 5 days.

If you were considering the	and the following new	you would then
risk-benefit ratio of the	information were to	consider the
following treatment	become available	treatment
Q25 BiPAP	Diminished air movement	-2 -1 0 +1 +2
	in both lung fields	
Q26 Lasix (furosemide) IV	Recently diminished urine	-2 -1 0 +1 +2
	output	
Q27 Nitroglycerin therapy	A past medical history of a	-2 -1 0 +1 +2
	pulmonary embolism	
Q28 BiPAP	Blood pressure is 100/60	-2 -1 0 +1 +2

Treatment option:
-2: strongly
contraindicated
-1: contraindicated
0: neither more nor less
indicated
+1: indicated
+2: strongly indicated

Case 8: A 55 year old M presents with 2 hours sudden onset sharp substernal chest pain. He is afebrile, his heart rate is 95 and his blood pressure is 118/65.

If you were considering the	and the following new	you would then
usefulness of the following	information were to	consider the
investigation	become available	investigation
Q29 Chest ray	His pain improves with	-2 -1 0 +1 +2
	sublingual nitroglycerin	
Q30 CT Chest Angiogram	The pain is worse with	-2 -1 0 +1 +2
	movement	
Q31 D-dimer	He notes pain between his	-2 -1 0 +1 +2
	shoulder blades	
Q32 Troponin	EKG is normal	-2 -1 0 +1 +2

Investigative option:
-2: useless
-1: less useful
0: neither more nor less
useful
+1: useful
+2: very useful

Case 9: 55 y/o M presents with a severe headache for 1 hour. He has a history of difficult to control hypertension and congestive heart failure. The patient's BP is 210/110.

If you were thinking of	and the following new	this diagnosis
the following diagnosis	information were to become	would become
	available	
Q33 Migraine headache	Improved symptoms with	-2 -1 0 +1 +2
	Compazine (promethazine) and	
	Benadryl (diphenhydramine)	
Q34 Hypertensive	Normal physical exam	-2 -1 0 +1 +2
Emergency		
Q35 Hypertensive	Normal Head CT	-2 -1 0 +1 +2
Encephalopathy		
Q36 Intracerebral	Patient takes a daily aspirin	-2 -1 0 +1 +2
hemorrhage		

Diagnosis option:
-2: very unlikely
-1: unlikely
0: neither likely nor
unlikely
+1: more likely
+2: very likely

Case 10: A 47M with melena after NSAID use due to a recent elbow injury has dizziness and anemia. He is receiving a transfusion of packed red blood cells (pRBCs). The nurse reports a new temperature of 37.5° C, heart rate is 125 bpm, blood pressure is 74/45 and oxygen saturation is 87% on room air.

If you were considering	and the following	you would then
the utility of the following	information were to become	consider this
treatment	available	treatment
Q37 IV antibiotics	Temperature rises to 38.5° C	-2 -1 0 +1 +2
Q38 IV antibiotics	WBC count rises to 13k	-2 -1 0 +1 +2
Q39 Emergent endoscopy	Repeat hemoglobin drops	-2 -1 0 +1 +2
	further	
Q40 A second unit of	Blood pressure does not	-2 -1 0 +1 +2
pRBCs	respond to 1 L bolus of IV	
	normal saline	

Treatment option:
-2: useless
-1: less useful
0: neither more nor
less useful
+1: useful
+2: very useful

Case 11: 60 y/o M with a history of COPD, CAD and type II diabetes mellitus presents with shortness of breath for 1 day that is getting progressively worse.

If you were considering	and the following new	you would then
the usefulness of the	information were to become	consider the
following investigation	available	investigation
Q41 Chest x-ray	Crackles in his lungs bilaterally	-2 -1 0 +1 +2
Q42 Venous blood gas	Wheezes in his lungs bilaterally	-2 -1 0 +1 +2
Q43 CT pulmonary	D-dimer is normal	-2 -1 0 +1 +2
angiogram		
Q44 Troponin	Wheezes in his lungs bilaterally	-2 -1 0 +1 +2

Investigative option:
-2: useless
-1: less useful
0: neither more nor
less useful
+1: useful
+2: very useful

Case 12: A 45 y/o F with a history of asthma and breast cancer presents with severe shortness of breath that has worsened over the last 2 days. She is unable to speak in full sentences and is tachypneic.

If you were considering the utility	and the following	you would then
of the following treatment	information were to	consider this
	become available	treatment
Q45 Duoneb (ipratropium	Diminished breath	-2 -1 0 +1 +2
bromide/albuterol sulfate)	sounds on lung exam	
nebulizer and IV solumedrol	bilaterally	
(methylprednisolone)		
Q46 BiPAP (non-invasive	pCO2 on ABG is 96	-2 -1 0 +1 +2
ventilation)		
Q47 BiPAP (non-invasive	O2 saturation by pulse	-2 -1 0 +1 +2
ventilation)	oximeter is 96%	
Q48 IV heparin	No wheezes on lung	-2 -1 0 +1 +2
	exam bilaterally	

Treatment option:	
-2: useless	
-1: less useful	
0: neither more nor	
less useful	
+1: useful	
+2: very useful	

Case 13: A 45 y/o M was eating dinner with friends this evening and developed throat tingling and fullness in the middle of the meal. He has no known allergies and he still feels tingling and fullness on presentation to the emergency department.

If you were	and the following new	you would
considering the risk-	information were to become	then consider
benefit ratio of the	available	the treatment
following treatment		
Q49 IM epinephrine	He has a history of hypertension	-2 -1 0 +1 +2
	and is on lisinopril	
Q50 IM epinephrine	He has wheezing on his lung exam	-2 -1 0 +1 +2
	bilaterally and he is vomiting	
Q51 IM epinephrine	He had a blood pressure of 95/65	-2 -1 0 +1 +2
	in the rescue squad that improved	
	to 115/70 after 1 liter of normal	
	saline	
Q52 IM epinephrine	He has no additional symptoms	-2 -1 0 +1 +2
	beyond what he initially reports	

Treatment option:
-2: strongly
contraindicated
-1: contraindicated
0: neither more nor less
indicated
+1: indicated
+2: strongly indicated

Case 14: A 48 year old M presents with syncope. He has no significant past medical history and has a normal neurologic exam. He does not think that he hit his head when he passed out.

If you were considering the usefulness of the	and the following new information were to become	you would then consider the
following investigation	available	investigation
Q53 CT head	He felt nauseated and flushed	-2 -1 0 +1 +2
	before passing out	
Q54 EKG	He has had 3 similar episodes of	-2 -1 0 +1 +2
	syncope	
Q55 Troponin	He felt chest pain before losing	-2 -1 0 +1 +2
	consciousness	
Q56 CT Chest	He had no prodrome of nausea,	-2 -1 0 +1 +2
Pulmonary Angiogram	sweating or flushing before losing	
	consciousness	

Investigative option:
-2: useless
-1: less useful
0: neither more nor
less useful
+1: useful
+2: very useful

Case 15: A 30 year old F with Type 1 DM presents with altered mental status. Her family found her at home stumbling and confused about her location and situation.

If you were thinking of the following treatment	and the following new information were to become available	this treatment would become
Q57 IV normal saline bolus	Glucose is 50	-2 -1 0 +1 +2
Q58 IV antibiotics	Her heart rate is 100, her temperature is 99°F and her respiratory rate is 25	-2 -1 0 +1 +2
Q59 IV insulin drip	Her blood glucose is 250, and she has trace ketones in her urine	-2 -1 0 +1 +2
Q60 IV insulin drip	Blood glucose is 700, urine ketones are 1+, pH is 7.35, Na is 127	-2 -1 0 +1 +2

Treatment option:
-2: strongly
contraindicated
-1: contraindicated
0: neither more nor
less indicated
+1: indicated
+2: strongly indicated

Case 16: A 55 year old M with COPD presents with confusion. His family found him at home sleepy and confused. He is normally alert and oriented x 3 and today he is alert and oriented only to name.

If you were thinking of the following diagnosis	and the following new information were to become available	this diagnosis would become
Q61 Serotonin syndrome	His heart rate is 90 and his blood pressure is 150/75	-2 -1 0 +1 +2
Q62 Opioid overdose	3 mm pupils and respiratory rate of 14	-2 -1 0 +1 +2
Q63 Seizure	Patient has 4 beats of clonus with Achilles reflex bilaterally, muscle tone is normal	-2 -1 0 +1 +2
Q64 COPD exacerbation	pCO2 on ABG is 65, pH is 7.2	-2 -1 0 +1 +2

Diagnosis option:
-2: very unlikely
-1: unlikely
0: neither likely nor
unlikely
+1: more likely
+2: very likely