HY NBME Psych Review

Some MS4

Introduction

-For the psych shelf, a key skill is the ability to parse out diagnoses that all have similar characteristics but have one or more unique differences. Read Qs carefully.

-The big “skill” required is an ability to recognize a diagnosis by paying attention to a particular “cluster” of sxs and “buzzwords”.

-Timelines are extremely important in psychiatry in addition to “counting symptoms”.

-Psych pharm is extremely HY for the shelf.

-Psych is best learnt in the context of clinical scenarios.

-This slide set has a 50-50 split of questions and aftermath slides detailing tons of HY information. It should be relatively quick to go through.

Q1A

A 23 yo business major (Patient A) who was a previous straight A student has surprised his friends over the last 7 months with consistent Ds in all his classes. He has stopped hanging out with his friends and prefers to live alone in his dorm room free of distractions. He was taken to the ED by some concerned friends. During the H&P, he informs the medical student that he has been given secret messages through a daily podcast regarding plots by some spies to infiltrate the Med19 Special Forces. He believes some aliens from Mars are driving to his apartment with a scheduled arrival 3 days from now. A urine drug screen and brain imaging are negative. What is the next best step in the management of this patient?

a. Begin Lorazepam.
b. Begin Clozapine.
c. Begin Risperidone.
d. Begin Escitalopram.
e. Cognitive Behavioral Therapy.

Q1A Key

-The most likely diagnosis here is schizophrenia. The best answer is C.

-Time frames are extremely important in psychiatry. Sxs must have been present for > 6 mo to dx schizophrenia.

-Schizophrenia is treated with neuroleptics.

-In general, atypical neuroleptics (which present with a reduced risk of EPS) are started first before typical neuroleptics like Haloperidol. Clozapine is an atypical neuroleptic but the risk of agranulocytosis is massive so this is not typically a first line drug.

-Schizophrenia is typically characterized by (at least 2 of these sxs) delusions (super irrational beliefs), auditory hallucinations (hearing voices), disorganized speech (all +ve sxs) AND negative sxs like social withdrawal and a flat affect.

Q1B

A 45 yo F is brought to the ED by concerned family members who recently noticed repetitive stereotypical movements of the patient's tongue. She has no other symptoms. She has a long history of schizophrenia that has been well controlled with Haloperidol. What is the next best step in the management of this patient?

a. Decrease the dose of haloperidol.
b. Change her medication to Clozapine.
c. Change her medication to fluphenazine.
d. Increase the dose of haloperidol.
e. Discontinue haloperidol and try electroconvulsive therapy.
f. Change her medication to Aripiprazole.

Q1B Key

-The best answer here is F. This patient is experiencing **tardive dyskinesia**. The next best step in management (NBSIM) is to stop haloperidol (typical antipsychotic, **nigrostriatal EPS effects**) and introduce an atypical agent (Aripiprazole).

-**Clozapine** is an atypical agent but it has some pretty nasty side effects **(agranulocytosis)**, so it is not the first line atypical agent. It is also HY to know that this is the only antipsychotic shown to **decrease the risk of suicide in schizophrenia**.

-For the atypicals, their blockade of DA receptors helps with treating the **+ve sxs of SCZ (mesolimbic pathway blockade)**. Their antagonism of 5HT receptors increases DA release in the **mesocortical pathway which helps treat the -ve sxs of SCZ**.

-It is HY to know certain key associations wrt to atypical antipsychotic side effects (SEs) for the purpose of your test. They are detailed in a coming slide.

Q1C

What is the best diagnosis that matches the following info cluster?

-Fixed, false beliefs despite evidence to the contrary.

-Hearing voices.

-Disorganized speech.

-Symptoms like social withdrawal, anhedonia, “being speechless”, flat affect, avolition.

-Disorganized behavior.

-Symptoms lasting > 6 mo.

Q1C Key

What is the best diagnosis that matches the following info cluster?

-Fixed, false beliefs despite evidence to the contrary (delusions).

-Hearing voices (perception of something that is not there).

-Disorganized speech.

-Symptoms like social withdrawal, anhedonia, “being speechless”, flat affect, avolition (-ve sxs).

-Disorganized behavior.

-Symptoms lasting > 6 mo.

Schizophrenia. You need 2 of the above 5 sxs for > 6 mo to make the dx.

Q1 Key contd.

-**Schizophreniform disorder** is “SCZ like” but the symptoms have to be around for < 6 mo.

-**Brief Psychotic Disorder** is also similar but the sxs have to be around for < 1 mo.

-**Schizotypal personality disorder** is another similar sounding one that should not trip you up on a test. These are individuals that have weird beliefs (like thinking that a crystal ball in their possession controls the rising and setting of the sun). They may also dress in relatively weird ways.

-It is also HY to know **what constitutes positive and negative sxs of SCZ**. They may give you a list of sxs and expect you to pick which is which.

-An example of a **delusion** is believing you are President Obama. An example of a **hallucination** is hearing President Obama giving you instructions to save the world.

Q1 Key contd.

-**Schizoaffective disorder** revolves around having SCZ+. The + here describes the presence of another **“mood disorder”** like bipolar disorder with concomitant mania, depression, etc. The predominant sx here is SCZ. The “mood” disorder on exams often happens **at the exact same time or in very close proximity to the SCZ**. As a generalization, the mood disorder should not happen on its own “in isolation”.

Q1 Key contd.

-**Clozapine** is associated with **agranulocytosis** (decreased WBC).

-**Quetiapine** causes **cataracts** (regular slit lamp exams needed).

-**Ziprasidone** has the strongest association with **QT interval prolongation**.

-**Risperidone** has the strongest association with **hyperprolactinemia (tuberoinfundibular pathway blockade)**.

-**Aripiprazole** is classically regarded as an antagonist at DA receptors. However, it's true MOA is as a **partial agonist at DA receptors**.

-**Olanzapine** has a strong association with the **metabolic syndrome** (elevated HbA1C, abnormal lipid studies, severe weight gain) in a patient recently placed on an antipsychotic.

Q2

-Assuming Patient 1A had symptoms over the last 3 months, what would the diagnosis be?

-What is the diagnosis if Patient 1A had symptoms over the past 7 months and then presented 3 weeks later with sxs consistent with pressured speech, increased goal directed activity, feelings of grandiosity, and a decreased need for sleep?

-What is the diagnosis if Patient 1A had symptoms that began over the past 3 weeks?

-A 25 yo art major gets straight As in all his classes. He has worked in the school cafeteria for the past 8 months and has an excellent relationship with his peers. He believes that a crystal ball he purchased at a farmer's market guides the onset of sunrise and sunset. What is your diagnosis?

-A 23 yo computer science major loves to work in dark rooms w/o distractions. He lives in a mobile home on a small plot he carved out in the forest. He enjoys working alone in his home and hates having to participate in group projects with his classmates. What is the diagnosis?

Q2 Key

-Assuming Patient 1A had symptoms over the last 3 months, what would the diagnosis be-**Schizophreniform disorder (< 6 months of SCZ sxs but > 1 mo)**.

-What is the diagnosis if Patient 1A had symptoms over the past 7 months and then presented 3 weeks later with sxs consistent with pressured speech, increased goal directed activity, feelings of grandiosity, and a decreased need for sleep-**Schizoaffective disorder (mood disorder + SCZ)**.

-What is the diagnosis if Patient 1A had symptoms that began over the past 3 weeks-**Brief Psychotic Disorder.**

-A 25 yo art major gets straight As in all his classes. He has worked in the school cafeteria for the past 8 months and has an excellent relationship with his peers. He believes that a crystal ball he purchased at a farmer's market guides the onset of sunrise and sunset. What is your diagnosis-**Schizotypal PD.**

-A 23 yo computer science major loves to work in dark rooms w/o distractions. He lives in a mobile home on a small plot he carved out in the forest. He enjoys working alone in his home and hates having to participate in group projects with his classmates. What is the diagnosis-**Schizoid PD.**

Q3

Match the description to the most likely offending medication;
Promotes weight loss, no sexual dysfunction, smoking cessation
Long half life prevents withdrawal with discontinuation
Raises BP, inhibits NE and Serotonin reuptake
Hypertensive emergency with aged cheese consumption
Significant anticholinergic side effects
Triggers seizures in people with eating disorders
Man with SCZ develops gynecomastia
Woman with SCZ goes from a BMI of 18 to 33
Highest risk of extrapyramidal side effects
WBC plummets to 200 cells 2 weeks after beginning SCZ tx
2 weeks after starting Fluphenazine (a high potency antipsychotic), a 23 yo M presents with tachycardia, T of 106 F, severe muscle rigidity, and a CBC demonstrating an elevated WBC and a creatine kinase of 70, 000. What is your dx?

Q3 Key

Match the description to the most likely offending medication;
Promotes weight loss, no sexual dysfunction, smoking cessation-**Bupropion**.
Long half life prevents withdrawal with discontinuation-**Fluoxetine**.
Raises BP, inhibits NE and Serotonin reuptake-**Venlafaxine**.
Hypertensive emergency with aged cheese consumption-**MAOIs**.
Significant anticholinergic side effects-**TCAs**.
Triggers seizures in people with eating disorders-**Bupropion**.
Man with SCZ develops gynecomastia-**Risperidone (hyperprolactinemia)**.
Woman with SCZ goes from a BMI of 18 to 33-**Olanzapine (atypical antipsychotic)**.
Highest risk of extrapyramidal side effects-**Haloperidol**.
WBC plummets to 200 cells 2 weeks after beginning SCZ tx-**Clozapine.**
2 weeks after starting Fluphenazine (a high potency antipsychotic), a 23 yo M presents with tachycardia, T of 106 F, severe muscle rigidity, and a CBC demonstrating an elevated WBC and a creatine kinase of 70, 000. What is your dx?-**Neuroleptic Malignant Syndrome (consider Dantrolene, Bromocriptine, and cooling blankets).**

Q4

Match the example given to the most likely personality disorder.

23 yo M is arrested for theft and vandalism. He shows no signs of remorse. He set his neighbor's home ablaze when he was 15 and was occasionally found striking their dog with a stick.

A medical student pays meticulous attention to his notes. He handwrites everything with a certain font and makes liberal use of "white-outs" to avoid errors in his work. He spends at least 15 hrs handwriting his notes on a daily basis. He has done really well in school but has no time for outside activities.

A 27 yo F is found in her dorm room crying hysterically about a recent breakup. She is in distress over how her groceries and yearly taxes will be taken care of now her boyfriend is gone. He always took the "big decisions" at home.

Q4 contd.

Match the example given to the most likely personality disorder.

Patient X comes for a doc's appointment. Patient X has been making suggestive remarks to a few of the patients waiting for their own appointments. Patient X is "dressed to kill".

Mr. Y is waiting in line at Walmart. There are 15 people in front of him. He walks to the front of the line and screams at the cashier for taking too much of his time.

A Med20 student believes his classmates are conspiring to bring him down. He set up cameras around his apartment to "catch classmates in the act". He has so far scored in the 80th percentile on all his med school exams.

Q4 contd.

Match the example given to the most likely personality disorder.

Mrs. Y decides to stay home from a 929 pregame. She would love to go but is afraid of seeming awkward to her other colleagues.

Mrs. Z storms out of the exam room screaming that you are the worst doctor in the world. She was recently treated in the ED for lacerations around her wrist after a recent breakup.

Q4 Key

Match the example given to the most likely personality disorder.

23 yo M is arrested for theft and vandalism. He shows no signs of remorse. He set his neighbor's home ablaze when he was 15 and was occasionally found striking their dog with a stick-**Antisocial PD**.

A medical student pays meticulous attention to his notes. He handwrites everything with a certain font and makes liberal use of "white-outs" to avoid errors in his work. He spends at least 15 hrs handwriting his notes on a daily basis. He has done really well in school but has no time for outside activities-**Obsessive-Compulsive PD.**

A 27 yo F is found in her dorm room crying hysterically about a recent breakup. She is in distress over how her groceries and yearly taxes will be taken care of now her boyfriend is gone. He always took the "big decisions" at home-**Dependent PD.**

Q4 Key contd.

Match the example given to the most likely personality disorder.

Patient X comes for a doc's appointment. Patient X has been making suggestive remarks to a few of the patients waiting for their own appointments. Patient X is "dressed to kill"-**Histrionic PD.**

Mr. Y is waiting in line at Walmart. There are 15 people in front of him. He walks to the front of the line and screams at the cashier for taking too much of his time-**Narcissistic PD.**

A Med19 student believes his classmates are conspiring to bring him down. He set up cameras around his apartment to "catch classmates in the act". He has so far scored in the 80th percentile on all his med school exams-**Paranoid PD.**

Q4 Key contd.

Match the example given to the most likely personality disorder.

Mrs. Y decides to stay home from a 929 pregame. She would love to go but is afraid of seeming awkward to her other colleagues-**Avoidant PD.**

Mrs. Z storms out of the exam room screaming that you are the worst doctor in the world. She was recently treated in the ED for lacerations around her wrist after a recent breakup-**Borderline PD.**

Note that OCD is ego-dystonic (patient realizes that what they are doing is irrational). Contrast with OCPD which is ego-syntonic (patient does not see anything wrong in what they are doing).

Q5

A 34 yo business executive receives a recent diagnosis of schizophrenia. 2 days after discharge from the hospital he is rushed to the ED by family members who are concerned about a new onset of repetitive “circular” motions of his forearm. What is the most likely diagnosis?

Assuming the patient presented with a constant urge to move with consistent pacing around the room, what is the most likely diagnosis?

Many years after treatment, the same patient consistently has multiple, rapid, rhythmic movements of his tongue. What is the most likely diagnosis?

What would your diagnosis be if the patient presented with ataxia, bradykinesia, and “stiff extremities” on exam? His temp is 97.8 F.

Q5 Key

A 34 yo business executive receives a recent diagnosis of schizophrenia. 2 days after discharge from the hospital he is rushed to the ED by family members who are concerned about a new onset of repetitive “circular” motions of his forearm. What is the most likely diagnosis-**Acute Dystonia (benztropine, diphenhydramine).**

Assuming the patient presented with a constant urge to move with consistent pacing around the room, what is the most likely diagnosis-**Akathisia (propranolol).**

Many years after treatment, the same patient consistently has multiple, rapid, rhythmic movements of his tongue. What is the most likely diagnosis-**Tardive Dyskinesia (discontinue the drug or start an atypical or start clozapine which is an atypical).**

What would your diagnosis be if the patient presented with ataxia, bradykinesia, and “stiff extremities” on exam? His temp is 97.8 F-**Parkinsonism (benztropine, DA agonist, amantadine).**

Schizophrenia-other key takeaways

-**Excessive** DA in the **mesolimbic** pathway is responsible for the **+ve sxs of SCZ**. The typical antipsychotics shut this down by blocking DA receptors.

-**Reduced** DA in the **mesocortical** pathway is responsible for the **-ve sxs of SCZ**. **Blocking DA receptors makes this worse**. **Atypical antipsychotics** are great are shutting this down b/c they increase DA activity in this pathway by blocking serotonin receptors.

-Blocking the **nigrostriatal pathway** is responsible for the **parkinsonism and EPS** side effects associated with neuroleptics.

-DA is also known as **Prolactin Inhibiting Factor**. Blocking DA receptors (**tuberoinfundibular pathway**) leads to **hyperprolactinemia** (very notable with **Risperidone**) and gynecomastia.

-Low potency typical antipsychotics (Chlorpromazine) cause **sedation (from H1 blockade), orthostatic hypotension (from a1 blockade), and anticholinergic sxs (muscarinic blockade)**.

Schizophrenia-other key takeaways contd.

-A study was conducted 12 years ago that led the FDA to put out a statement that there is an **increased risk of death** with atypical antipsychotics in elderly people with dementia.

Q6

A 23 yo medical student gunning for plastic surgery reluctantly comes to the university health department in response to constant cajoling by his roommates. During the interview, he states that he has gotten through a lot of reading, vacuumed his home and the entire 10th floor of 929, burnt through 30, 000 anki flashcards which he made individually and wrote 12 papers for upcoming TIME courses. He feels that time felt sleeping is wasted time he could use to get through more “future work”. During the interview, he constantly interrupts the physician and speaks at an accelerated rate. He feels on top of the world. He consistently goes off track and regularly needs redirection. His roommates state that he has been irritable recently and has emailed all the physicians in the SC project brochure to explore the possibility of starting new projects. 2 months ago, he felt completely distraught with life and slept at home for more than 2 weeks w/o attending any of his classes. He stopped playing soccer with his friends which he had enjoyed for many years. He had thoughts of taking his life and felt “physically slow”. PE, labs, and UA are unremarkable. He has no history of drug use. He had a similar “superman” episode 3 months ago (first occurrence). What is the next best step in management?

a. Escitalopram therapy.
b. Carbamazepine therapy.
c. Lithium therapy.
d. Electroconvulsive Therapy.

Q6 Key

-The best answer is C, Lithium therapy. This patient has Bipolar 1 disorder. Li is the first line treatment for bipolar disorder. Be wary in the setting of **renal failure**.

-He has manic sxs (DIGFAST for > 1 week) and a hx of depressive sxs. Note that manic sxs are the only requirement needed for the dx of BPD 1. Mood sxs are not necessary.

-BPD 2 is characterized by hypomanic sxs (DIGFAST lite for > 4 days) and mood sxs (which are generally required for dx). Hypomanic episodes are **generally not associated with derangements in social or occupational functioning**.

-Li is associated with a **fine tremor, hypo/hyperthyroidism, and nephrogenic diabetes insipidus** that is treated with drugs like amiloride and triamterene.

-**Valproate** is another good option but has an association with **liver toxicity** and birth defects in pregnant women taking the drug.

Q7

A 53 yo woman complains of poor appetite, insomnia, decreased interest in activities that she used to enjoy, difficulty concentrating, and loss of energy for much of the past year. She has lost 19 pounds in the last 6 months. She denies ETOH or illicit drug use and does not take any prescribed medications. PE is unremarkable. Lab evaluation reveals a normal TSH and T4. What is the next best step in the management of this patient?

a. Tranylcypromine therapy.
b. Haloperidol therapy.
c. A trial of low dose cyclosporine.
d. Sertraline therapy.
e. Carbamazepine for 3 weeks followed by a Lorazepam taper.

Q7 Key

-The best answer here is D, Sertraline therapy.

-This patient has the classic sxs of MDD. The patient should have 5 out of 9 SIGECAPS sxs for the past 2 weeks on an almost daily basis which should significantly impair function. Depressed mood or anhedonia must be one of the sxs (makes up the 9 sxs).

-SIGECAPS goes with Sleep, Interest, Guilt, Energy, Concentration, Appetite, Psychomotor retardation, and Suicidal Ideation.

-The monoamine theory states that a deficiency of NE, Dopamine, and Serotonin lead to sxs of depression.

-It is very HY to know for many exams and the wards that hypothyroidism has to be r/o before a dx of MDD is made. Don’t get this wrong on a test!

Q7 Key contd.

-There are multiple drugs used to tx MDD.

-The first line class includes the **SSRIs like Fluoxetine, Sertraline, and Paroxetine**. Take note of the **sexual dysfunction and GI upset** that accompany these agents. They take about 4-6 weeks to kick in and should not be stopped if effects are not seen immediately. Next steps could include dose increases OR switching to a different SSRI.

-There's **SNRIs like Duloxetine and Venlafaxine. Note that Venlafaxine raises BP and Duloxetine is used for the treatment of neuropathic pain.**

-There's **NDRIs like Bupropion** which are notable for the **absence of sexual side effects and are particularly useful in depressed individuals with comorbid obesity and tobacco use**. Do not give this to people with **seizures or a high risk of seizures** secondary to electrolyte imbalances (anorexics, bulimics, etc).

Q7 Key contd.

-There's also **MAOIs like Phenelzine/Tranylcypromine/Isocarboxazid** that have an association with a hypertensive crisis in the setting of **tyramine food consumption**. These drugs are good for atypical depression. These drugs ARE NOT FIRST LINE.

-There's **TCAs that all end in "pramine" and "epin". These drugs have SEs ranging from orthostatic hypotension (from alpha-1 blockade) to dry mouth (from antimuscarinic effects). These drugs are dangerous in overdose** (they can stop your heart, cause comas and convulsions) and Na bicarb is the rescue agent. They can be used to treat **nocturnal enuresis**. Why???

-The TCAs are also used for **chronic pain syndromes** like the SNRIs.

-Finally, there's **Electroconvulsive Therapy (ECT)** which has the HY SE of anterograde amnesia. It is relatively safe and has a 90% response rate. It is employed in "dangerous" MDD situations where rapid relief is required. It is also safe in pregnancy.

Q7 Key contd.

-There's weird drugs like Mirtazapine used for depression that are alpha-2 antagonists (how will this increase NE release???). Mirtazapine is good for depression and comorbid anorexia b/c it causes weight gain and stimulates the appetite.

-Finally, there's serotonin receptor modulators like Trazodone that are associated with sedation and a HY SE of **priapism**.

Other HY takeaways include:

-SSRIs being especially good in men with **premature ejaculation**.
-Serotonin syndrome being a complication of mixing drugs with serotonergic effects (like SSRIs and a mixture of SNRIs or MAOIs or TCAs or Linezolid or MDMA or Sumatriptan, etc). In general, you should wait about 2 weeks for these drugs to washout out of the system before starting another.
-MAO-B inhibitors like Selegiline are used to treat Parkinson's disease (kill DA breakdown).
-Consider **Dysthymia (Persistent Depressive Disorder)** with mild depressive sxs that occur over a long time period (2 year timeframe).

Q8

A 7 yo boy is brought to the physician by his mother for behavioral problems. The mother says that for as long as she can remember he has been much more difficult than his other brothers and sisters. She is also concerned that he has been doing poorly in the second grade and his teacher has complained several times about his disruptive behaviors in class which include excessive talking and inappropriately leaving his classroom seat. He appears distracted and fidgety in the physician's office and answers only 1 of 5 questions posed by the physician in a questionnaire. He does not appear to be listening to the physician. What is the most likely diagnosis?

a. Normal behavior.
b. Attention Deficit Hyperactivity Disorder.
c. Conduct Disorder.
d. Oppositional Defiant Disorder.

Q8

-The best answer here is B, ADHD.

-**ADHD** = hyperactivity, impulsiveness, inattentiveness, and distractibility in 2 or more settings.

-**ODD** is generally associated with kids being disobedient to authority. **CD** is associated with kids exhibiting ODD characteristics with the added component of violence (usually setting stuff on fire or being cruel to animals).

-Give **methylphenidate or dextroamphetamine** to these kids. They prevent the reuptake of NE and DA at the adrenergic synapse. These drugs decrease sleep, suppress appetite, and could stunt growth in kids. A non-stimulant drug like **Atomoxetine** can also be used to treat ADHD.

Q9

A 56 yo business executive is 1 day out from an uncomplicated cholecystectomy for symptomatic cholelithiasis. The nurse notices a significant variation in his VS compared to what was measured in the PACU. HR is 153 bpm, BP is 170/105. He has tremors and has been feeling nauseous. He is given a beta blocker for symptomatic relief. 24 hrs later he begins to describe a feeling of bugs crawling under his skin, appears delirious, and has a mild fever. He begins to have generalized tonic-clonic movements of his hands and legs. What is the next best step in the management of this patient?

a. IV Lorazepam therapy.
b. IV Phenobarbital therapy.
c. A 4-6 week course of Bupropion.
d. Referral for Alcoholics Anonymous counseling.

Q9 Key

-The best answer is A, Lorazepam therapy. This patient has gone into delirium tremens. He deserves a **benzodiazepine (increases frequency of chloride channel opening which hyperpolarizes neurons, GABA receptor)**.

-You should watch out for this specific scenario on the shelf/Step 2.

-Benzos should not be given for long periods of time to prevent "dependence". They are used in the **short term** to calm down actively seizing individuals (or individuals with acute episodes of anxiety). Essentially all Benzos end in **"pam"** with the exception of **Chlordiazepoxide**. Lorazepam is one of the poster child benzos.

-Most benzos are **eliminated by the liver and metabolized by 3A4 (except Lorazepam, it is cleared by the liver and metabolized by glucuronidation**, the same holds true for **Oxazepam and Temazepam, give these 3 in liver dysfunction**). Give **flumazenil** (GABA receptor antagonist) in the setting of BZD overdose.

Note

-Barbiturates also work like BZDs but have the mechanism of increasing the **duration** of chloride channel opening. They cause significant respiratory depression and are more lethal than BZDs in overdose. There is no rescue agent.

-As an aside, the **Z drugs** for insomnia (Zolpidem, Zaleplon, and Eszopiclone) can be reversed with **flumazenil**.

-ETOH also works as a GABA receptor agonist. This is why benzos are first line in the tx of delirium tremens

Q10

What is the most likely offending agent?;

25 yo college senior is combative and disoriented. Complains that bugs are crawling under his skin. BP is 210/140, HR is 180 bpm, RR is 40. He is sweating profusely, and his pupils are dilated. He is brought to the ED by friends b/c he has been complaining of chest pain.

Q10 Key

What is the most likely offending agent?

25 yo college senior is combative and disoriented. Complains that bugs are crawling under his skin. BP is 210/140, HR is 180 bpm, RR is 40. His is sweating profusely, and his pupils are dilated. He is brought to the ED by friends b/c he has been complaining of chest pain.

A-This is cocaine intoxication. Cocaine blocks the reuptake of catecholamines at the adrenergic synapse. Remember that the SNS causes mydriasis and a "sympathetic response". On the psych shelf, look for "eye findings" as the "kind giveaways" to the OD scenarios. This patient deserves a BZD, not a beta-blocker. Cocaine withdrawal is the opposite of all these sxs. If a BZD is not an answer choice, consider answer choices like phenoxybenzamine/phentolamine (alpha blockers) or Carvedilol/Labetalol (alpha/beta blockers).

HY Drugs of Abuse

Drug Intoxication	Trigger Words	Withdrawal
Opioids	Pupils constricted, ↓RR	"Flu-like" symptoms, rhinorrhea, anxiety, piloerection
Amphetamine	Pupils dilated, delusions, ↑HR, ↑BP	Hunger, hypersomnolence
PCP	Nystagmus, ataxia, ↑BP, clenching/grinding of the teeth (bruxism), random acts of violence and belligerence, hyperthermia	Depression
LSD	Flashbacks, pupillary dilation, depression, hallucinations	
Marijuana	Increased appetite, conjunctival irritation, paranoia, increased appetite, hallucinations	Irritability, depression, nausea, decreased appetite
MDMA ("ecstasy")	Hyperthermia, bruxism	
Anticholinergics—TCAs, pesticides □ (tf0010)	Dry skin, flushing, fever, urinary retention, dilated pupils, delirium, cardiac conduction delays, thirst, ↑HR	
Benzodiazepines, barbiturates ("benzos," "barbs")	Anxiety, ataxia, somnolence, life-threatening respiratory depression with barbiturates	Anxiety, insomnia, seizures
Cholinergic poisoning—organophosphates, anticholinesterases	Salivation, ↓HR, vomiting, urination, defecation, pupil constriction	

HY Drugs of Abuse contd.

-If an individual has **conjunctival injection and an insatiable appetite** for food on the shelf, consider **Marijuana** intoxication.

-If an individual has significant **respiratory depression and pinpoint pupils (miosis)**, consider **opioid** intoxication. With **respiratory depression and a normal pupillary size**, think of **Benzo** intoxication.

-It is HY to know that individuals addicted to opioids **never get "tolerant" to effects like miosis** (meperidine does not cause this->muscarinic antagonist) and **constipation**.

-If you see a question detailing a teen from a party with seizures from hyponatremia, or a descriptor of an individual that has danced for hours on end, consider **MDMA** as the offending agent (also causes Serotonin Syndrome).

-Remember the association b/w **substandard heroine and MPTP** (Parkinsonism).

-Associate LSD with flashbacks.

Q11

A 19 yo cheerleader comes in for an annual physical with the medical director of the local sports team. She has not had menses for the past 12 months. Her BMI is 16.

What is the most likely diagnosis?

Q11 Key

A 19 yo cheerleader comes in for an annual physical with the medical director of the local sports team. She has not had menses for the past 12 months. Her BMI is 16.

What is the most likely diagnosis?

This lady most likely suffers from anorexia nervosa. Consider this in a young F on your exam who has a **super low BMI (usually < 18.5), belongs to a sport/activity associated with having a super nice body image, has dental caries, calluses on the dorsal surface of her hands (Russell's sign), multiple electrolyte anomalies (low K/Cl and a metabolic alkalosis), fine hair on the skin (lanugo), amenorrhea (the body shuts down the HPG axis in the setting of starvation), and stress fractures (from low estrogen)**.

-Consider **bulimia** in the presence of a similar presentation and a relatively **normal/slightly overweight BMI**.

Q11 Key contd.

-Anorexics have a marked, severe fear of weight gain and subject themselves to severe starvation. They are often < 85% of ideal body weight.

-Patient with anorexia often respond better to **personal/family counseling**. You could try antidepressants, but they rarely work. For the NBME, consider **Mirtazapine** as a good antidepressant for this patient population.

Q12

BMI of 16, purging, runs 30 miles a day, consumes 400 calories a day
Binge eats, compensates by using Miralax, BMI is 25
A patient with a hx of migraines begins Sertraline and has clonus, hyperreflexia, tachycardia, tachypnea, ocular clonus, muscle rigidity
> 6 mo with > 6 sxs of inattention, hyperactivity, impulsivity in 2 settings, fidgety child, must be present before the age of 12, doesn't wait in line for his turn, does not complete assignments
Extremely combative individual with vertical/horizontal nystagmus
Consistent, intrusive thoughts about germs, hand washing to relieve the anxiety associated with these thoughts
First line treatment for OCD
HTN, Tachycardia, AMS, fever, muscle rigidity, recent hx of hearing voices
UE tremors, cold intolerance, N/V/D, polyuria, polydipsia
First line treatment for an individual that worries about everything
Delusions, auditory hallucinations, disorganized speech, flat affect for 7 mo
Rescue agent for AMS, RR of 4, and pupillary miosis
25 yo M having smoked meats and red wine at the Inner Harbor becomes disoriented. BP enroute to the ED is 240/150

Q12 Key

BMI of 16, purging, runs 30 miles a day, consumes 400 calories a day-**anorexia nervosa.**
Binge eats, compensates by using Miralax, BMI is 25-**Bulimia Nervosa.**
A patient with a hx of migraines begins Sertraline and has clonus, hyperreflexia, tachycardia, tachypnea, ocular clonus, muscle rigidity-**Serotonin Syndrome.**
> 6 mo with > 6 sxs of inattention, hyperactivity, impulsivity in 2 settings, fidgety child, must be present before the age of 12, doesn't wait in line for his turn, does not complete assignments-**ADHD**
Extremely combative individual with vertical/horizontal nystagmus-**PCP intoxication.**
Consistent, intrusive thoughts about germs, hand washing to relieve the anxiety associated with these thoughts-**OCD (not OCPD!).**
First line treatment for OCD-**SSRIs and CBT.**
HTN, Tachycardia, AMS, fever, muscle rigidity, recent hx of hearing voices-**Neuroleptic malignant syndrome (give dantrolene).**
UE tremors, cold intolerance, N/V/D, polyuria, polydipsia-**Lithium side effects.**
First line treatment for an individual that worries about everything-**SSRIs or SNRIs (also Buspirone).**
Delusions, auditory hallucinations, disorganized speech, flat affect for 7 mo-**Schizophrenia.**
Rescue agent for AMS, RR of 4, and pupillary miosis-**Naloxone (not naltrexone!).**
25 yo M having smoked meats and red wine at the Inner Harbor becomes disoriented. BP enroute to the ED is 240/150-**MAOI and hypertensive crisis.**

Q13

A 2.5 yo healthy infant is brought to his pediatrician by his concerned mom. He sits in the corner and keeps to himself during the interview. He is called multiple times by the pediatrician during the interview with no response. He mutters a few noises when he is called by his mom and retains an expressionless face despite multiple attempts to make him smile. He spends the entire interview stacking bricks in the pediatrician's office.

What is the most likely diagnosis?

Q13 Key

-This child has an **autism spectrum disorder**.

-This disorder is characterized by poor interpersonal communication, lack of responsiveness to others, an absence of a social smile, occasional intellectual disability, poor eye contact, preoccupation with specific objects, regimented patterns of behavior, and the repetitive use of certain phrases.

-Manifestation is usually before a child hits 36 mo.

Q14A

You are called to evaluate a 25 yo M prior to discharge after spending 3 days in central booking for driving under the influence. He feels completely dissatisfied with life, is restless, and has not slept for the past 2 days. You wonder how boring you must be as he constantly yawns during the interview. He has a bad runny nose and there's copious amounts of saliva dripping from the lateral side of his mouth. His PE is notable for marked pupil dilation. He runs to use the restroom 3x during the interview. What is the next best step in the management of this patient?

a. Dextroamphetamine therapy.
b. Supportive care.
c. Referral to alcoholics anonymous.
d. Naltrexone therapy.
e. Flumazenil therapy.

Q14A Key

You are called to evaluate a 25 yo M prior to discharge after spending 3 days in central booking for driving under the influence. He feels completely dissatisfied with life, is restless, and has not slept for the past 2 days. You wonder how boring you must be as he constantly yawns during the interview. He has a bad runny nose and there's copious amounts of saliva dripping from the lateral side of his mouth. His PE is notable for marked pupil dilation. He runs to use the restroom 3x during the interview. What is the next best step in the management of this patient?

a. Dextroamphetamine therapy.
b. Supportive care (opioid withdrawal, not life threatening!)
c. Referral to alcoholics anonymous.
d. Naltrexone therapy.
e. Flumazenil therapy.

Q14B

What is the overdose situation that best matches the following information cluster?

-pH 6.9, pCO_2 is 80.

-Constipation.

-Pupillary constriction.

-Patient is unresponsive.

Q14B Key

What is the overdose situation that best matches the following information cluster?

-pH 6.9, pCO_2 is 80.

-Constipation.

-Pupillary constriction.

-Patient is unresponsive.

Opioid overdose. This patient has a respiratory acidosis with miosis and constipation. The reversal agent that will be the right answer on a test is Naloxone (an opioid receptor antagonist). Do not be deceived by the NBME putting Naltrexone as an answer choice in the same Q. It does the same thing but is longer acting. One weird use of Naltrexone is as a means of treating ROH dependence.

Note The Following

-Opioid dependence can be treated with **Buprenorphine (partial mu receptor agonist)** in combination with naloxone (combo is called Suboxone). **Methadone** can also be used for this purpose (prolongs the QT interval though).

-A **partial nicotine receptor agonist (Varenicline)** can be used in the treatment of dependence on tobacco.

-Alcoholism may be associated with;

The development of reversible confusion, ophthalmoplegia, and ataxia (Wernicke's, give thiamine) OR Making stuff up (confabulations)/amnesia + Wernicke sxs which are largely not reversible (Korsakoff's psychosis).

Differentiate the seizures and autonomic instability associated with **Delirium Tremens** from the visual hallucinations and relative autonomic stability associated with **alcoholic hallucinosis**.

Q15

What is the most likely diagnosis given the following clinical scenarios?

37 yo F comes to the ED complaining of left arm weakness for the past 6 hrs. PE and complete neurological exam including brain imaging is negative.

46 yo M has a long history of multiple ED visits. During the interview he consistently expresses worry about having colon, gastric, and renal cancer. His PE is normal and he has no history of weight loss or other constitutional symptoms.

A 27 yo nursing student with no relevant PMH comes to the ED complaining of lightheadedness. She has had this episode once every week for the past 6 mo. A fingerstick glucose reading is 27 mg/dl. Plasma insulin levels are elevated but C-peptide is undetectable.

Q15 contd.

What is the most likely diagnosis given the following clinical scenarios?

A 27 yo resident comes to the ED complaining of lightheadedness within 10 minutes of his 30 hr shift. He has never had this episode before. His BP on telemetry is 75/47. His roommate has a history of hypertrophic cardiomyopathy treated with extended release metoprolol.

Q15 Key

What is the most likely diagnosis given the following clinical scenarios?

37 yo F comes to the ED complaining of left arm weakness for the past 6 hrs. PE and complete neurological exam including brain imaging is negative-**Conversion Disorder.**

46 yo M has a long history of multiple ED visits. During the interview he consistently expresses worry about having colon, gastric, and renal cancer. His PE is normal and he has no history of weight loss or other constitutional symptoms-**Hypochondriasis (now Illness Anxiety Disorder, no "real" somatic symptoms vs somatic symptom disorder where there are real somatic sxs that cause the patient extensive worry, tx with regularly scheduled physician visits)**. Consider **Conversion Disorder** in the setting of weird "neurological" signs with a recent stressor.

A 27 yo nursing student with no relevant PMH comes to the ED complaining of lightheadedness. She has had this episode once every week for the past 6 mo. A fingerstick glucose reading is 27 mg/dl. Plasma insulin levels are elevated but C-peptide is undetectable-**factitious disorder (when would this be factitious disorder imposed on another???).**

Q15 contd.

What is the most likely diagnosis given the following clinical scenarios?

A 27 yo resident comes to the ED complaining of lightheadedness within 10 minutes of his 30 hr shift. He has never had this episode before. His BP on telemetry is 75/47. His roommate has a history of hypertrophic cardiomyopathy treated with extended release metoprolol-**Malingering.**

N/B-suspect malingering in the presence of factitious disorder with the opportunity for some kind of secondary gain.

The "gain" in factitious disorder is a "primary gain".

Q16

What is the diagnosis that best matches the following info cluster?

-Acute onset of AMS and fluctuations in levels of consciousness.

-Disorganized thoughts and lack of concentration.

-Sees a lion in the exam room.

-Presented to the ED yesterday with dysuria, urinary frequency, and urgency.

-Discharged home 3 days later in perfect health.

Q16 Key

What is the diagnosis that best matches the following info cluster?

-Acute onset of AMS and fluctuations in levels of consciousness.

-Disorganized thoughts and lack of concentration.

-Sees a lion in the exam room.

-Presented to the ED yesterday with dysuria, urinary frequency, and urgency.

-Discharged home 3 days later in perfect health.

This is delirium. Be able to recognize this cluster of sxs. Medications and infections (especially UTIs) are common etiologies on exams.

Q17

What is the diagnosis that best matches the following info cluster?

-76 yo F who is alert during an interview.

-Presents with a 3 yr history of “forgetfulness”

-20/30 on a MMSE.

-May be treated with “central” acting acetylcholinesterase inhibitors.

Q17 Key

What is the diagnosis that best matches the following info cluster?

-76 yo F who is alert during an interview.

-Presents with a 3 yr history of “forgetfulness”

-20/30 on a MMSE.

-May be treated with “central” acting cholinesterase inhibitors.

This is dementia (gradual onset, no alteration in consciousness).

Q18

What is the diagnosis that best matches the following info cluster?

-Excessive anxiety and worry > 50% of the time over a preceding 7 mo period.

-Restlessness, fatigue, declining grades, insomnia.

-Agitated at the slightest provocation.

-Citalopram is one possible drug choice for this disorder.

Q18 Key

What is the diagnosis that best matches the following info cluster?

-Excessive anxiety and worry > 50% of the time over a preceding 7 mo period.

-Restlessness, fatigue, declining grades, insomnia.

-Agitated at the slightest provocation.

-Citalopram is one possible drug choice for this disorder.

Generalized Anxiety Disorder.

Q19

What is the most likely diagnosis given the following clinical scenarios?

30 yo F has the sudden onset of tachycardia, tachypnea, and intense sweating that goes away after 10 mins. Her last menstrual period was 3 weeks ago. She has had similar episodes a few times a month for the past year. She is worried about having these episodes when she begins her new job next month.

55 yo comes to see a psychiatrist from a VA referral. He has been bordered by flashbacks of gun duels with warlords from multiple stints as a peace keeping army officer in a foreign country. He has a “flat affect” as he describes these episodes.

Q19 Key

What is the most likely diagnosis given the following clinical scenarios?

30 yo F has the sudden onset of tachycardia, tachypnea, and intense sweating that goes away after 10 mins. Her last menstrual period was 3 weeks ago. She has had similar episodes a few times a month for the past year. She is worried about having these episodes when she begins her new job next month-**Panic Disorder.**

55 yo comes to see a psychiatrist from a VA referral. He has been bordered by flashbacks of gun duels with warlords from multiple stints as a peacekeeping army officer in a foreign country. He has a "flat affect" as he describes these episodes-**This is PTSD. Common exam buzzwords are flashbacks and re-experiencing of prior traumatic experiences. SSRIs are first line. Sxs must be present for > 1 mo. The dx is acute stress disorder if < 1 mo. As an aside, note that prazosin can be used for the nightmares in PTSD while clonidine can be used for Tourette's syndrome.**

Q20

What is the diagnosis that best matches the following info cluster?

-Visual hallucinations.

-Bradykinesia and cogwheel rigidity.

-Intracytoplasmic, eosinophilic inclusions in the cerebral cortex and substantia nigra.

-Forgetful, barely talks during an interview. Finds it difficult to “produce words”

Q20 Key

What is the diagnosis that best matches the following info cluster?

-Visual hallucinations.

-Bradykinesia and cogwheel rigidity.

-Intracytoplasmic, eosinophilic inclusions in the cerebral cortex and substantia nigra.

-Forgetful, barely talks during an interview. Finds it difficult to “produce words”.

-Lewy Body Dementia.

Q21

What is the diagnosis that best matches the following info cluster?

-Bradykinesia, cogwheel rigidity, small handwriting observed first.

-Becomes forgetful and talks at a slow speed 2 years later.

-Intracytoplasmic eosinophilic inclusions localized primarily to the substantia nigra.

Q21 Key

What is the diagnosis that best matches the following info cluster?

-Bradykinesia, cogwheel rigidity, small handwriting observed first.

-Becomes forgetful and talks at a slow speed 2 years later.

-Intracytoplasmic eosinophilic inclusions localized primarily to the substantia nigra.

-Parkinson's Disease dementia.

Q22

What is the diagnosis that best matches the following info cluster?

-Atrophy of frontal and temporal lobes. Spares the posterior ⅔ of the superior temporal gyrus.

-Intracytoplasmic and intranuclear inclusions made of hyperphosphorylated tau protein.

-6 mo history of personality changes and inappropriate behavior.

Q22 Key

What is the diagnosis that best matches the following info cluster?

-Atrophy of frontal and temporal lobes. Spares the posterior ⅔ of the superior temporal gyrus.

-Intracytoplasmic and intranuclear inclusions made of hyperphosphorylated tau protein.

-6 mo history of personality changes and inappropriate behavior.

-Frontotemporal Dementia

Q23

What is the diagnosis that best matches the following info cluster?

-Intracytoplasmic bundles of neurofilaments.

-Earlier onset in an individual containing 3 copies of the APP gene (and PS1/PS2 mutations).

-ApoE4 mutation increases risk of late onset disease.

-Gradual, progressive, memory impairment.

-Treatment is with “central acting cholinesterase inhibitors” and Memantine (NMDA receptor antagonist).

Q23 Key

What is the diagnosis that best matches the following info cluster?

-Intracytoplasmic bundles of neurofilaments.

-Earlier onset in an individual containing 3 copies of the APP gene (and PS1/PS2 mutations).

-ApoE4 variant mutation increases risk of late onset disease.

-Gradual, progressive, memory impairment.

-Treatment is with “central acting cholinesterase inhibitors” and Memantine (NMDA receptor antagonist).

-Alzheimer’s Dementia (is the most common cause of dementia in the US).

Q24

What is the diagnosis that best matches the following info cluster?

-Stepwise decline in cognitive function.

-History of HTN.

-Brain MRI shows multiple foci of ischemia.

-Left arm weakness, right leg hemiplegia.

Q24 Key

What is the diagnosis that best matches the following info cluster?

-Stepwise decline in cognitive function.

-History of HTN.

-Brain MRI shows multiple foci of ischemia.

-Left arm weakness, right leg hemiplegia.

-Vascular Dementia. Common in individuals with a history of HTN and DM. Is the 2nd most common cause of dementia in the US.

Q25

Given the following clinical scenarios, what is the most likely diagnosis?

Mr. Y is a med student. He has a fear of heights. He avoids seeing any patients that are not on the ground floor of the hospital.

Mrs. X is a med student. She constantly feels irritable and has trouble sleeping. Her friends describe her as a “light fuse” that can pop at any time. She is always fearful and worried about paying tuition, passing board exams, keeping her home safe, paying taxes, keeping her home clean, etc. She has experienced these sxs more than 50% of the time over the last 8 mo.

Mr. Z is a med student. He avoids going to school parties for fear of being disgraced by members of his class.

Q25 contd.

Given the following clinical scenarios, what is the most likely diagnosis?

Mrs. A is a med student. 6 weeks ago, she had a “scary episode” on the bus that was characterized by sweating, palpitations, and feeling like “she lost control”. She has since avoided the bus, walks 10 miles back and forth to school each day, and is worried about having another episode like this.

Mr. B is a med student. He skips every class and stays home all the time. He is afraid of being stuck alone in elevators, going to music concerts, riding the bus to school, and being in a movie theater.

Q25 Key

Given the following clinical scenarios, what is the most likely diagnosis?

Mr. Y is a med student. He has a fear of heights. He avoids seeing any patients that are not on the ground floor of the hospital-**Specific Phobia.**

Mrs. X is a med student. She constantly feels irritable and has trouble sleeping. Her friends describe her as a "light fuse" that can pop at any time. She is always fearful and worried about paying tuition, passing board exams, keeping her home safe, paying taxes, keeping her home clean, etc. She has experienced these sxs more than 50% of the time over the last 8 mo-**Generalized Anxiety Disorder. Give SSRIs, SNRIs, or Buspirone.**

Mr. Z is a med student. He avoids going to school parties for fear of being disgraced by members of his class-**Social Anxiety Disorder.**

Q25 Key contd.

Given the following clinical scenarios, what is the most likely diagnosis?

Mrs. A is a med student. 6 weeks ago, she had a "scary episode" on the bus that was characterized by sweating, palpitations, and feeling like "she lost control". She has since avoided the bus, walks 10 miles back and forth to school each day, and is worried about having another episode like this-**Panic Disorder (remember that 1 isolated episode < 1 mo w/o the "maladaptive responses" = panic attack). Give SSRIs to these people for "chronic" management. If they are "actively" having autonomic hyperactivity on the test, give a benzodiazepine.**

Mr. B is a med student. He skips every class and stays home all the time. He is afraid of being stuck alone in elevators, going to music concerts, riding the bus to school, and being in a movie theater-**Agoraphobia.**

Q26

What is the diagnosis that best matches the following information cluster?

-7 yo M comes for his pediatric well child visit. He keeps jumping all over the room.

-His mom complains that he exhibits similar behavior at home.

-His teachers have told his mom that he never waits his turn to answer questions and does not seem to concentrate in class.

Q26 Key

What is the diagnosis that best matches the following information cluster?

-7 yo M comes for his pediatric well child visit. He keeps jumping all over the room.

-His mom complains that he exhibits similar behavior at home.

-His teachers have told his mom that he never waits his turn to answer questions and does not seem to concentrate in class.

This is ADHD. Dx must be made prior to age 12 with symptoms observed in at least 2 settings by multiple individuals. Treatment is with amphetamine derivatives, methylphenidate, or atomoxetine (which is not a stimulant). Note the growth stunting, appetite suppressing, and sleep depriving SEs of these medications.

Q27

What is the diagnosis that best matches the following information cluster?

-6 year old F clears her throat multiple times a day and blinks excessively.

-She repeats everything her older brother says.

-Haloperidol can be used as treatment.

Q27 Key

What is the diagnosis that best matches the following information cluster?

-6 year old F clears her throat multiple times a day and blinks excessively.

-She repeats everything her older brother says.

-Haloperidol can be used as treatment.

This is Tourette's Syndrome. Dx is based on the presence of motor tics (point A) and vocal tics (point B, in this case echolalia, if she repeated obscene words, it is described as coprolalia). A drug like guanfacine OR clonidine (alpha 2 agonists) may also be used as treatment. 2nd gen antipsychotics are also used due to their more favorable side effect profile over first generation agents.

Q28A

Given the following descriptors, what is the most likely personality disorder?

A 44 yo businessman presents to the ED with a small bruise on his arm that may need stitches. The ED is packed with other patients waiting to be seen by the triage nurse. After 5 mins in the waiting room, he screams at the security guard wondering why he is not the first person to be seen.

A 33 yo M believes his wife is cheating on him. He installs cameras all around his house because he thinks the neighbor's kids are stealing from his backyard garden. He recently sued his business partner for paying himself a dollar more than he was paid last month.

Q28A Key

Given the following descriptors, what is the most likely personality disorder?

A 44 yo businessman presents to the ED with a small bruise on his arm that may need stitches. The ED is packed with other patients waiting to be seen by the triage nurse. After 5 mins in the waiting room, he screams at the security guard wondering why he is not the first person to be seen-**Narcissistic personality disorder. Feel entitled and have zero empathy.**

A 33 yo M believes his wife is cheating on him. He installs cameras all around his house because he thinks the neighbor's kids are stealing from his backyard garden. He recently sued his business partner for paying himself a dollar more than he was paid last month-**paranoid personality disorder. These people do not trust anyone. (Multiple weird thoughts = PPD vs a single, prominent thought for delusional disorder).**

Q29B

Given the following descriptors, what is the most likely personality disorder?

21 yo F presents to the ED with a wrist injury producing copious amounts of blood. During the interview, she admits to recently breaking up with her boyfriend of 2 months after they had a huge quarrel. As the physician calmly listens to her presenting complaints, she describes him as the best physician she has ever had. She feels lonely and has a prior history of attempting suicide.

25 yo F is the center of attention in the waiting room of a community cardiologists office. She has held conversations with 6 men in the 45 minutes she has spent waiting for her appointment. She is dressed in a sexually suggestive fashion.

Q29B Key

Given the following descriptors, what is the most likely personality disorder?

21 yo F presents to the ED with a wrist injury producing copious amounts of blood. During the interview, she admits to recently breaking up with her boyfriend of 2 months after they had a huge quarrel. As the physician calmly listens to her presenting complaints, she describes him as the best physician she has ever had. She feels lonely and has a prior history of attempting suicide-**borderline personality disorder. Tenuous relationships, suicidality, splitting (defense mechanism).**

25 yo F is the center of attention in the waiting room of a community cardiologists office. She has held conversations with 6 men in the 45 minutes she has spent waiting for her appointment. She is dressed in a sexually suggestive fashion-**Histrionic personality disorder. These people are attention seeking. They tend to be overly dramatic and emotional.**

Q29B Key contd.

As an aside, remember the other HY personality disorders;

Antisocial personality disorder with crime/lack of remorse after doing really bad things. **Conduct disorder** is the dx prior to 18. **Oppositional defiant disorder** is a similarly presenting disorder that may be used to trip you up on the NBME. ODD is characterized primarily by disobedience to parents, teachers, etc. They are not really violent.

Schizoid personality disorder involves individuals that work/live alone and do not want to interact with people. Contrast with **avoidant personality disorder** where the individuals want to live interact with people but are loners as a means of avoiding embarrassment.

The term **"dependent personality disorder"** is fairly descriptive. **Obsessive Compulsive Personality disorder** presents typically in a perfectionist who finds nothing wrong in his living mannerisms **(ego syntonic)**. Don't mix this up with **Obsessive (intrusive thoughts) Compulsive (tension relieving actions) disorder which is ego-dystonic.**

Q30

What is the dx that best matches the following info cluster?

-Patient can’t concentrate, buys a boat and a new car, feels like he is the president of the world, talks like a sportsman, feels rested with 90 mins of sleep each night.

-First line treatment is Li.

-These sxs have lasted for 2 days and required hospitalization.

Q30 Key

What is the dx that best matches the following info cluster?

-Patient can't concentrate, buys a boat and a new car, feels like he is the president of the world, talks like a sportsman, feels rested with 90 mins of sleep each night.

-First line treatment is Li.

-These sxs have lasted for 2 days and required hospitalization.

This is Bipolar 1 Disorder. You need an elevated mood + 3 of the DIGFAST sxs for > 1 week to make the diagnosis (aka mania). If the patient is hospitalized OR is psychotic, the time frame DOES NOT MATTER. In addition, BPD 1 requires only mania (not necessarily an episode of depression).

Q30 Key contd.

-Other HY associations to be aware of with BPD include the combination of **hypomania and an episode of depression** for 4 or more days as the diagnostic criteria for BPD 2 (the same # of DIGFAST criteria required for mania apply, however there is no real “life” impairment).

-Treatment of BPD (daily treatment) is with **Li (avoid with elevated Creatinine, can cause hypo/hyperthyroidism, and nephrogenic diabetes insipidus which can be treated with Amiloride/Triamterene)**. You should also remember the **Ebstein’s anomaly** association.

-A possible substitute to Li is **valproate** but this drug could **nuke the liver** and cause NTDs.

-It is very HY to know that an **“acute” manic episode** requires treatment with an **antipsychotic/benzodiazepine** (usually atypical but can be first gen).

Q30 Key contd.

-The **antipsychotics** are also nice drugs for the treatment of bipolar disorder in **pregnancy**. Choose this over Li if presented as an answer choice.

-One other bizarre scenario that could pop up on a test is knowing what to do if Li has been tried with poor control of BPD sxs. Consider **adding one of the atypical antipsychotics** to the patient's medication regimen (like aripiprazole, quetiapine, ziprasidone, olanzapine, etc).

Q31

What is the diagnosis that best matches the following info cluster?

-21 yo premed cheerleader in her senior year of college.

-BMI is 17. “House exam” reveals Dulcolax and Furosemide.

-Current GPA is a 4.0.

-Has not menstruated in 3 years. Recently had an ischiopubic stress fracture.

Q31 Key

What is the diagnosis that best matches the following info cluster?

-21 yo premed cheerleader in her senior year of college.

-BMI is 17. “House exam” reveals Dulcolax and Furosemide.

-Current GPA is a 4.0.

-Has not menstruated in 3 years. Recently had an ischipubic stress fracture.

Anorexia Nervosa. Look for a super low BMI on your exam (in contrast with the normal or slightly elevated BMI in the setting of bulimia). Super HY to know that Bupropion should be avoided in these patients if they give you a history of comorbid depression on the test. Bupropion lowers the seizure threshold and these patients tend to have electrolyte anomalies that may predispose them to having seizures.

Q31 Key contd.

-Don't be surprised if giving **Mirtazapine** (antagonizes alpha 2 receptors, which increases NE release) is answer for the treatment of depression on in the anorexic population on your test. This drug **has weight gain as an associated SE** which will certainly be appreciated in this case.

-**Olanzapine** (atypical antipsychotic) is also a good option in these patients given the desired **SE of the metabolic syndrome**.

-In general, the best treatment for these patients revolve around **CBT (psychotherapy)** and in some cases **family therapy**.

-Other HY associations with anorexia include **osteoporosis** (they are hypoestrogenic), **amenorrhea** (with caloric restriction, the HPG axis stops working).

Q31 Key contd.

-An anorexic patient with severe sxs may be **involuntarily hospitalized** against their will in certain specific exam circumstances (like suicide).

-If you get a question that describes an anorexic patient who is checked into the hospital, receives a ton of food, and then starts having seizures, consider **refeeding syndrome** as the diagnosis. The reintroduction of food triggers a **hyperinsulinemic state (causes low serum phosphate)** that may drive multiple elytes into the cell and tip them over the edge.

-As an aside, if you get a question about a patient in hospice or one that is terminally ill but has no appetite, consider administering **Megestrol Acetate** (a progesterone analog that spruces the appetite).

Q32

A 44 yo F is brought to the ER by her daughter who is worried about the patient "sleeping in" for the past 3 weeks. Prior to this episode, she worked as a personal trainer in a clinic for individuals with movement disorders but quit her job a few days ago after losing one of her patients who had Parkinson's disease. In comparison to the patient's last visit to the hospital 3 months ago for the removal of a neck mass, the patient has gained close to 20 Lbs and during the interview complains of a poor appetite. She now sleeps at home all day. What is the next best step in the management of this patient?

a. Sertraline therapy.
b. Early morning cortisol and dexamethasone suppression test.
c. Amitriptyline therapy.
d. Exposure and response prevention therapy.
e. Measurement of serum TSH levels.

Q32 Key

-The best answer here is E, **measurement of serum TSH levels**. This patient is most likely hypothyroid. One big clue here is the recent hospitalization for the removal of a neck mass. Do not be surprised on the shelf by an answer that also sounds like **"MDD due to a medical condition".**

-Classic medical causes of depression include **hypothyroidism** (weight gain, decreased reflexes, cold intolerance), **hyperparathyroidism** (stones, bones, groans, and psychiatric overtones), **drugs** like beta blockers/interferon beta (MS), and **cancers** (especially brain cancers). **Stroke** patients are also at high risk of depression. If you don't get enough sleep (e.g. 3rd year med student or patient with **OSA**), you could also get depression.

Q33

A 45 yo M with a past history of depression, IVDU, HTN, Type 2 diabetes, and hyperlipidemia is admitted to the hospital for surgical drainage and IV antibiotic treatment of an intra-abdominal abscess. He is initially placed on 14 days of IV Vancomycin for *S. Aureus* coverage with rapid improvements in his symptoms. Prior to discharge, a decision is made to switch the patient to an oral, once a day 14 day regimen of Linezolid. The most likely contraindication to this regimen is?

a. The patient's' past history of depression.
b. The patient's' past history of hyperlipidemia.
c. The patient's' recent surgical procedure.
d. The patient's' history of medication non-compliance.
e. The patient's' history of HTN.
f. Poor antibiotic coverage for *S. Aureus*.

Q33 Key

-The best answer is A, the patient's' past history of depression.

-The first line treatment for MDD is an SSRI. Linezolid is a commonly tested antibiotic (50S ribosome inhibitor) that has a strong association with serotonin syndrome so you would want to avoid this combination. Linezolid has excellent S. Aureus coverage.

-Other HY drugs associated with serotonin syndrome include SNRIs, MAOIs (remember the other issues with tyramine containing foods), sumatriptan (migraine med), and MDMA (ecstasy).

Q34

A 33 yo G2P1 female at 33 weeks gestation is brought to the ED by her husband after he found her trying to take 10 tablets of fluoxetine with robitussin to “take the edge off”. For the past 4 weeks, she has expressed a desire to give up the baby for adoption before leaving the hospital after delivery. Concerned, the physician decides to involuntarily hospitalize the patient. For the next 3 days, the patient strongly refuses all food offered in the hospital. Prior to attempting definitive management, the patient should be warned about?

a. The risks of neural tube defects associated with this treatment.
b. The risks of memory impairment with this treatment.
c. The risks of a seizure disorder with this treatment.
d. The risks of severe GI bleeding with this treatment.
e. The risks of severe radiation exposure with this treatment.

Q34 Key

-The best answer here is B.

-This pregnant patient with depression in addition to active suicidal ideation and refusal to eat requires urgent treatment with electroconvulsive therapy.

-It is HY to know that one of the **most common SEs of ECT is anterograde and/or retrograde amnesia** that is often reversible.

-**Other HY indications** for ECT include OCD refractory to conventional treatment, acute schizophrenia unresponsive to medication, catatonia, severe depression in the elderly, depression with a high risk of suicide, and a prior +ve response to ECT.

Q35

A 64 yo M comes to a neurologist for his routine 3 month follow up appointment. Prior to appropriate pharmacological control, he had a 3 year history of excessive daytime sleepiness. He occasionally has what he describes as “bizarre dreams” upon awakening in the morning. A med student working with the neurologist as a preceptor decides to perform an experiment in rats with the goal of replicating other findings of this disease. This experiment would most likely involve?

a. Blockade of alpha-1 adrenergic receptors.
b. Activating interactions with the NMDA receptor.
c. Administration of an orexin receptor blocking agent.
d. Administration of a GABA receptor activating agent.
e. Administration of an agent that inhibits norepinephrine reuptake at adrenergic synapses.
f. Administration of an agent that inhibits GABA and glycine release from Renshaw cells.

Q35 Key

-The best answer is C. This patient has Narcolepsy. Individuals with narcolepsy have a deficiency of orexin (hypocretin).

-Blocking orexin receptors should produce similar effects.

-A new drug (Suvorexant) actually works by blocking Orexin receptors as a treatment for insomnia. I think about this as insomnia (little sleep) being on the other end of the spectrum from narcolepsy (excessive sleep).

Q36

Our test patient is opioid dependent. Given the following responses in a physician conversation, what is the most likely “stage of change”?

Doc I don’t want to discuss this right now.

Doc, I plan to quit after the shelf exam. I have registered for a Suboxone program in the community.

Doc, I have been doing pretty well since I completed the Suboxone program. I have severed relationships with all my “druggie” buddies so I don’t fall back into old patterns of behavior. I’ll visit you monthly to check in on my progress.

I recognize I have a heroine problem, I just can’t quit right now.

Doc, I am currently in a Suboxone program.

Q36 Key

Our test patient is opioid dependent. Given the following responses in a physician conversation, what is the most likely “stage of change”?

Doc I don’t want to discuss this right now-**Precontemplation.**

Doc, I plan to quit after the shelf exam. I have registered for a Suboxone program in the community-**Preparation.**

Doc, I have been doing pretty well since I completed the Suboxone program. I have severed relationships with all my “druggie” buddies so I don’t fall back into old patterns of behavior. I’ll visit you monthly to check in on my progress-**Maintenance.**

I recognize I have a heroine problem, I just can’t quit right now-**Contemplation**.

Doc, I am currently in a Suboxone program-**Action.**

Q37

Given the following descriptors, what is the most likely diagnosis?

A 23 yo med student finds it difficult to sleep during the day. He recently started 2 weeks of nights on the Charcot Medicine Service. He has been caught snoring multiple times by the supervising resident and attending. He had normal sleep patterns before this all started. He has been making mistakes on the job and no longer enjoys activities he previously enjoyed.

A 27 yo F is given a warning letter for the 4th episode of lateness since beginning a new job 4 days ago. She graduated as a mechanical engineer from Insomnia College. She was always able to get bye in college since classes were not mandatory. She denies having daytime sleepiness and gets 8 hrs of sleep every night. Her new job requires her to be at work by 9 AM. She has been getting to work at 11.45 AM.

Q37 contd.

Given the following descriptors, what is the most likely diagnosis?

A concerned med student runs to his friend's room around 3AM after he heard a loud noise. This friend is sweating profusely and describes a terrifying dream where he was stabbed by a surgeon who pimped him extensively 2 weeks ago.

A concerned med student runs to his friend's room around 3AM after he heard a loud noise. This friend is barely arousable and goes back to sleep. The med student questions his friend the next morning who flatly denies any sort of screaming episode.

Q37 Key

Given the following descriptors, what is the most likely diagnosis?

A 23 yo med student finds it difficult to sleep during the day. He recently started 2 weeks of nights on the Charcot Medicine Service. He has been caught snoring multiple times by the supervising resident and attending. He had normal sleep patterns before this all started. He has been making mistakes on the job and no longer enjoys activities he previously enjoyed-**Shift Work Sleep Disorder.**

A 27 yo F is given a warning letter for the 4th episode of lateness since beginning a new job 4 days ago. She graduated as a mechanical engineer from Insomnia College. She was always able to get bye in college since classes were not mandatory. She denies having daytime sleepiness and gets 8 hrs of sleep every night. Her new job requires her to be at work by 9 AM. She has been getting to work at 11.45 AM-**Delayed Sleep Phase Disorder (good sleep, but this person goes to sleep super late at night).**

Q37 Key contd.

Given the following descriptors, what is the most likely diagnosis?

A concerned med student runs to his friend's room around 3AM after he heard a loud noise. This friend is sweating profusely and describes a terrifying dream where he was stabbed by a surgeon who pimped him extensively 2 weeks ago-**Nightmare disorder. Occurs during REM sleep (the patient remembers). Consider REM sleep behavior disorder as the dx if the Q stem describes a person performing "detailed activity" during sleep.**

A concerned med student runs to his friend's room around 3AM after he heard a loud noise. This friend is barely arousable and goes back to sleep. The med student questions his friend the next morning who flatly denies any sort of screaming episode-**this is sleep terror disorder (patient does not remember, occurs during stages N3/4 of sleep which are associated with delta waves. Benzos decrease this stage).**

Other HY Sleep Associations

-Benzos can be used to treat insomnia on a short term basis, they are NOT first line.

-GABA agonists like Zolpidem, Zaleplon, and Eszopiclone can be used to treat insomnia. Other meds here include Ramelteon (melatonin receptor agonist) and Suvorexant (orexin receptor antagonist).

-Trazodone is one HY psych med that promotes sleep (and priapism). How would priapism be treated?

-Sleep has certain HY EEG associations-> Stage N1 (theta waves), N2 (sleep spindles and K complexes, bruxism), N3 (delta waves, enuresis, reduced by Benzos and Imipramine), REM (beta waves, reduced muscle tone, penile tumescence, rapid eye movements controlled by the Paramedian Pontine Reticular Formation).

Weird Anatomical Associations For The Shelf

Huntington's disease is associated with **caudate atrophy.**
Parkinson's is associated with **depigmentation of the Substantia Nigr**a. You should find Lewy bodies (alpha synuclein only in the substantia nigra, contrast with Lewy Body Dementia where Lewy bodies are in the cortex and substantia nigra).
Schizophrenia is associated with **increased size of the lateral ventricles**.
Panic attacks are associated with **locus coeruleus dysfunction/decreased volume of the amygdala (too much NE)**.
ALZ is associated with **degeneration of the Basal Nucleus of Meynert (site of Ach production)**.
Wernicke's encephalopathy is associated with atrophy of the **mammillary bodies**.
Dysfunction of the **Suprachiasmatic Nucleus** is observed in **insomnia**.
The **PPRF controls rapid eye movements** in REM sleep.
OCD is associated with **orbitofrontal cortex** anomalies.

Random but HY

-Drugs with anticholinergic activity should be avoided in the elderly (TCAs, antihistamines like diphenhydramine, low potency typical antipsychotics).
-Cyproheptadine may be used to treat serotonin syndrome. It is an antihistamine that also has powerful serotonin receptor blocking activity.
-A famous TCA, clomipramine, may be used to treat OCD (try SSRIs first!)
-One telltale sign of TCA overdose is wide QRS complexes on an ECG. Give Na Bicarb ASAP.
-DBT (dialectical behavioral therapy) is a form of CBT used to treat borderline personality disorder.
-Exposure and response prevention is a HY treatment for OCD.
-If an elderly patient is acutely delirious, give an antipsychotic like Haloperidol.
-Older individuals sleep less, take more time to fall asleep (increased sleep latency), and spend less time in REM sleep.
-Enuresis cannot be diagnosed prior to age 5. Treatment options include desmopressin (caution with hyponatremic seizures) and imipramine. Alarms work best.
Catatonia can be treated with benzodiazepines and/or ECT.

All The Best!