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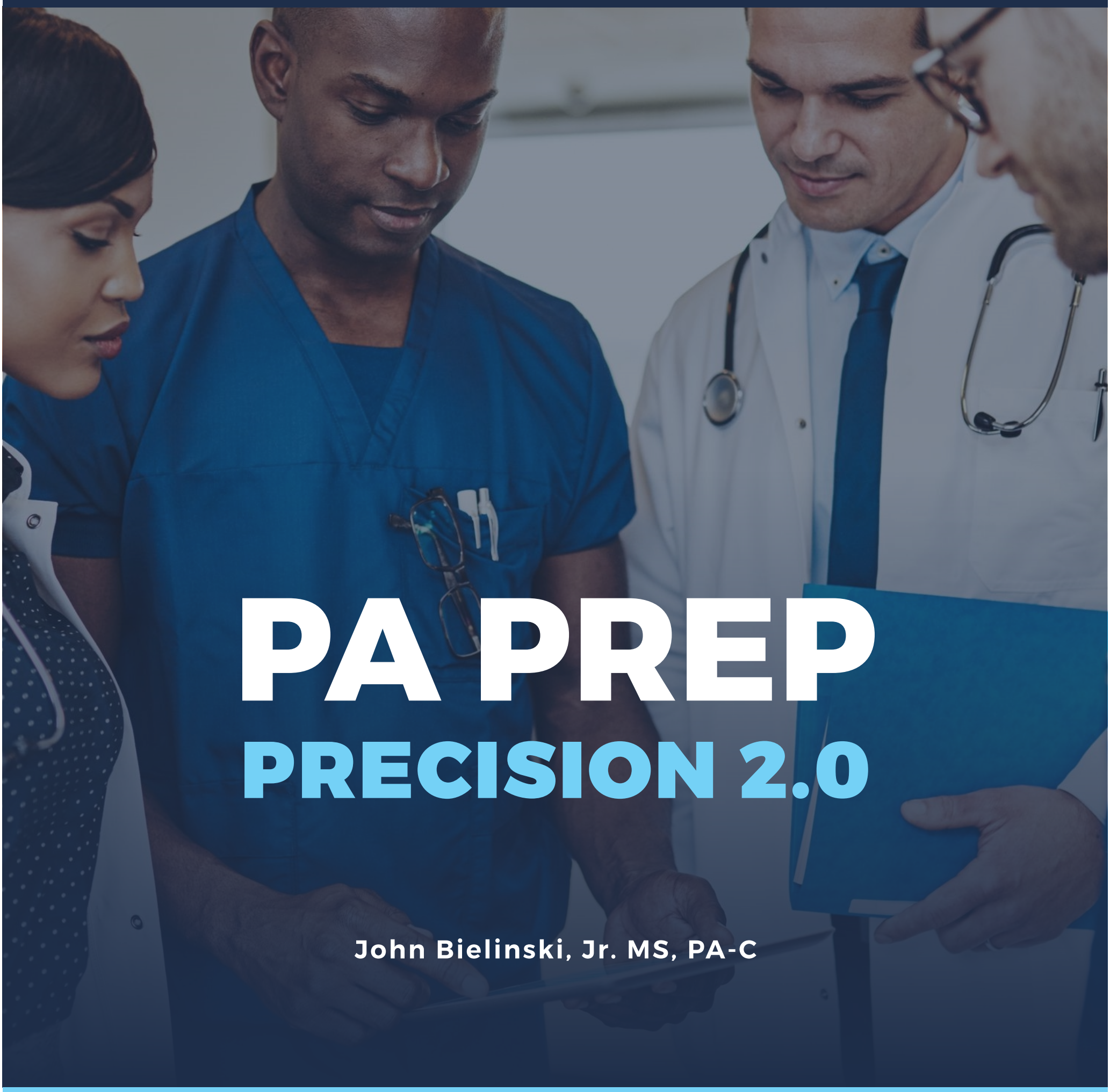

PA PREP
PRECISION 2.0

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Must Know Content For Preparing For The PANCE

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PA PREP PRECISION 2.0

PROBLEM	TASK CATEGORY	ANSWER
CARDIOVASCULAR SYSTEM		
Abdominal Aortic Aneurysm	Using Diagnostic & Laboratory Studies	1. Initial imaging study of choice in suspected AAA to determine presence, size, & extent; Also used to monitor progression in size (expansion) = Abdominal US 2. Gold Standard to dx AAA = Angiography
Abdominal Aortic Aneurysm	Formulating Most Likely Diagnosis	Men > 65 YO; smoker Asx until expanding/ruptures; Rupture=Sudden, severe, constant back/flank/abdominal/groin pain and/or in shock Palpable pulsatile abdominal mass on PE
Acute MI	Pharmaceutical Therapeutics	IV fluids, O2, ASA, NTG, Beta blocker, ACE-I, statins, anticoags, anti-platelet meds
Acute MI, Anterior	Formulating Most Likely Diagnosis	ST elevations in V1-V4 on 12-lead EKG ST depressions in 2 other contiguous leads
Adverse Drug Effect: Antiarrhythmics	Pharmaceutical Therapeutics	Amiodarone SE's = optic neuritis/thyroid disease/hepatitis/pulmonary fibrosis Na+ channel blockers OD = wide complex QRS
Afib	Formulating Most Likely Diagnosis	EKG: irregularly irregular rhythm, no P waves, usually narrow complex QRS Presents as either an arrhythmia or an embolic event (CVA, limb ischemia, mesentery ischemia, renal artery stenosis)
Aneurysm, thoracoabdominal	Pharmaceutical Therapeutics	BB's reduce shearing forces, decrease expansion & rupture risk.
Angina	Pharmaceutical Therapeutics	Stable = Nitro/BB/CCB Unstable = "MONA" (morphine, O2, nitro, ASA)
Aortic Aneurysm	Clinical Intervention	Lifestyle mods (quit smoking, decrease diabetes & cholesterol risks; regular exercise; BB, statin, daily low-dose aspirin, plavix; Anticoags Surgical revascularization Many AAA's that rupture die of CV collapse prior to arrival @ hospital
Aortic Stenosis	Clinical Intervention	Aortic valve replacement only effective treatment No exercise restrictions in pts with mild AS; Severe AS:avoid physical exertion/vasodilators (ex. nitrates)/negative inotropes (CCB, BB)
Arrhythmia, Complete Heart Block	Clinical Intervention	Acute/symptomatic: temporary pacing --> permanent pacemaker Definitive tx: permanent pacemaker
Arrhythmia, PAC's	Formulating Most Likely Diagnosis	PAC is a premature "beat"/QRS that has a P wave before it
Arrhythmia, Paroxysmal Supraventricular Tachycardia (PSVT)	Formulating Most Likely Diagnosis	Heart rate > 100 bpm; rhythm usually regular with narrow QRS complexes; P waves hard to discern due to the rapid rate
Arrhythmia, Paroxysmal Supraventricular Tachycardia (PSVT)	Clinical Intervention	1. Vagal nerve stimulation with maneuver or 2. Adenosine
Arrhythmia, Ventricular Fibrillation	Clinical Intervention	These pts are in cardiac arrest. CPR & defibrillation (unsynchronized cardioversion)
Arrhythmia, V-tach	Clinical Intervention	Stable sustained V-tach: Anti-arrhythmics (Amiodarone*, Lidocaine, Procainamide) Unstable V-tach with a pulse: synchronized cardioversion V-tach (no pulse): Defibrillate (unsynchronized cardioversion) + CPR Torsade's: IV Mag
Arrhythmia, V-tach (Torsade's de Pointes)	Clinical Intervention	Do EKG; Tx with IV magnesium sulfate
Atrial Fibrillation	Pharmaceutical Therapeutics	1. Slow the heart down (BB/CCB) 2. Anticoagulate (almost always) 3. Convert (pharmacologically or electrically)

PROBLEM	TASK CATEGORY	ANSWER
Atrial Septal Defect	Applying Basic Scientific Concepts	oxygenated L-atrium blood crosses ASD and mixes with deoxygenated R-atrium blood; greater blood volume in R-atria can lead to R-HF, arrhythmia, pulmonary HTN
Atrial Septal Defect	Formulating Most Likely Diagnosis	systolic ejection crescendo-decrescendo murmur best heard @ pulmonic area (LUSB); widely fixed-split S2 that does NOT vary with respiration
Cardiac Arrest	Clinical Intervention	CPR 1st Defibrillate if in V-tach or V-fib Give epinephrine, other meds as indicated
Cardiac Tamponade	Formulating Most Likely Diagnosis	Beck's Triad (JVD-"distended neck veins", muffled heart sounds, low BP) Pulsus Paradoxus: > 10 mm Hg decrease in SBP w/ inspiration
Cardiac Tamponade	Using Diagnostic & Laboratory Studies	ECHO: ventricles collapse in diastole (+ presence of an effusion)
Cardiogenic Shock	Clinical Intervention	1. Emergent ECHO 2. O2, Isotonic fluids (only shock where we do NOT use aggressive fluids) 3. Inotropes 4. Pressors 5. Admit to ICU & Tx underlying cause
Coarctation of the Aorta	Formulating Most Likely Diagnosis	suspect in child with secondary HTN, bilateral lower extremity claudication; systolic murmur that radiates to back/scapula or chest; systolic BP in upper extremities > lower extremities; delayed or weak femoral pulses; CXR: rib-notching/"3" sign
Coarctation of the Aorta	History Taking & Performing Physical Exam	secondary HTN in child; bilateral lower extremity claudication; systolic murmur radiating to back/scapula or chest; systolic BP in upper extremities > lower extremities; delayed or weak femoral pulses
Coarctation of the Aorta	Clinical Intervention	Surgical correction: balloon angioplasty+/- stent PGE1 pre-operatively to decrease sxs/improve lower extremity blood flow
Congestive Heart Failure (CHF)	Applying Basic Scientific Concepts	Poor pumping --> blood stalls and backs up in the circulation JVD/HJR/Ascites/Edema for R-sided HF S3 and rales in lungs for L-sided HF
Congestive Heart Failure (CHF)	History Taking & Performing Physical Exam	Hx always consists of SOB & DOE PE= JVD/HJR/Ascites/Edema for R-HF; S3 and rales in lungs for L-HF
Congestive Heart Failure (CHF)	Health Maintenance, Patient Education, & Preventative Measures	Overall health: wt. loss, stop smoking/ETOH Restrict sodium intake to 3 g/day Fluid restriction (< 2 L/day) with class IV HF Daily weight monitoring
Congestive Heart Failure (CHF)	Pharmaceutical Therapeutics	Acute CHF tx: "LMNOP" (lasix, morphine, nitro, O2, Position/bi-PaP) Chronic CHF: ACE/ARB, BB
Coronary Artery Disease	Using Diagnostic & Laboratory Studies	Workup: EKG initial test --> stress testing --> Angiography = Gold Standard
Coronary Artery Disease	Clinical Intervention	Open the artery with a stent or bypass it with a graft (CABG)
Coronary Artery Vasospasm	Formulating Most Likely Diagnosis	1. Variant (Prinzmetal) Angina: coronary spasm --> transient ST elevations usually without MI; chest pain usually nonexertional, often occurring @ rest (early morning or wakes pt up at night); EKG:transient ST elevations; Angiography:vasospasm with IV Ergonovine 2. Cocaine-induced MI: coronary artery vasospasm; DOC= CCB & Nitrates; Avoid BB in cocaine-induced MI
Dilated Cardiomyopathy	Applying Basic Scientific Concepts	The muscular wall of the L ventricle is enlarged, weakened, and thus cannot pump well; Commonly d/t ETOH/cocaine abuse, thyroid disease, or pregnancy. Causes CHF

PROBLEM	TASK CATEGORY	ANSWER
Dilated Cardiomyopathy	Pharmaceutical Therapeutics	Standard HF tx: ACEI, Diuretics, BB (if not in decompensated CHF), Digoxin, Na+ restriction, Implantable Defibrillator (AICD) if EF < 30-35%, Cardiac transplant
Dilated Cardiomyopathy	Health Maintenance, Patient Education, & Preventative Measures	Limit alcohol Manage BP, Lipids, and DM Increase Exercise
Dissecting Aortic Aneurysm	Using Diagnostic & Laboratory Studies	1. CT Scan w/ contrast (CT 3-D is rapidly becoming the test of choice (esp. in ER) 2. MRI Angiography = Gold Standard 3. TEE: accurate, portable. May be used initially if hemodynamically unstable 4. CXR: widening of the mediastinum
Dressler Syndrome	Pharmaceutical Therapeutics	Aspirin or Colchicine
DVT	Health Maintenance, Patient Education, & Preventative Measures	Most important consequence is a pulmonary embolism. RF's: Virchow's Triad (stasis, damage, hypercoagulability)
Endocarditis	Pharmaceutical Therapeutics	Tx with abx. Usual bug is staph, so we tx with Vancomycin Prophylaxis: DOC = 2g Amoxicillin 30-60 min before procedure (600 mg Clindamycin if PCN allergic)
Endocarditis, infective	Using Diagnostic & Laboratory Studies	1. Blood cultures (before abx)- 3 sets at least 1 hr apart if stable; 2. EKG; 3. Echo; 4. Labs:CBC; Increased ESR/Rheumatoid factor Modified Duke Criteria
Essential Hypertension	Formulating Most Likely Diagnosis	Stage 1: SBP 130-139 or DBP 80-89 Stage 2: SBP 140+ or DBP 90+
Giant Cell Arteritis	Formulating Most Likely Diagnosis	usually elderly female; unilateral temporal HA with visual disturbance, scalp tenderness, jaw claudication, throat pain
Giant Cell Arteritis	Clinical Intervention	GCA is a clinical dx! Labs and biopsy are supportive. Dx via increased ESR > 100, Temporal artery biopsy)
Giant Cell Arteritis	Pharmaceutical Therapeutics	High-dose corticosteroids (ex. prednisone 40-60 mg/day x 6 wks) with gradual tapering based on sxs and ESR
Heart malformation, Left Atrium	Using Diagnostic & Laboratory Studies	Echocardiogram
Heart murmur: Aortic	Using Diagnostic & Laboratory Studies	Echocardiogram
Hypercholesterolemia	Health Maintenance, Patient Education, & Preventative Measures	Wt. loss, exercise, low saturated fats
Hyperlipidemia	Pharmaceutical Therapeutics	Best med to lower LDL = statins. Best med to lower triglycerides = Fibrates. Best med to raise HDL = Niacin. Bile acid sequestrants (Cholestyramine) only one safe in pregnancy.
Hypertension	Health Maintenance, Patient Education, & Preventative Measures	Wt. loss; Dietary Approaches to Stop HTN (DASH) Diet is high in veggies, fruits, low-fat dairy, whole grains, poultry, fish & nuts. Low in sweets, sugar-sweetened drinks, & red meats. Salt restriction; Exercise (aerobic & possibly resistance training); Limit alcohol intake
Hypertrophic Obstructive Cardiomyopathy (HOCM)	Using Diagnostic & Laboratory Studies	1. Echo: asymmetrical wall thickness (esp. septal) > 15 mm, systolic anterior motion of mitral valve 2. EKG: LVH (increased voltage on EKG), atrial enlargement 3. CXR: cardiomegaly
Hypertrophic Obstructive Cardiomyopathy (HOCM)	Pharmaceutical Therapeutics	1. Medical: BB=1st line 2. Surgical Myomectomy 3. Alcohol Septal Ablation 4. and/or ICD placement

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Hypotension	Pharmaceutical Therapeutics	If cool/clammy, it's volume loss and they need fluids/pressors; If "warm shock," they need vasopressors.
Junctional Tachycardia	Applying Basic Scientific Concepts	impulse generated from AV node; 3 different P waves- either no P wave, an inverted P wave, or a P wave after the QRS complex
Kawasaki Disease	Formulating Most Likely Diagnosis	MC in children (esp < 5 YO), boys, Asians "warm + CREAM" (fever + 4 of the following 5: Conjunctivitis, Rash, Extremity (peripheral) changes [ex.arthritis], Adenopathy (cervical lymphadenopathy), mucous membrane [ex. lip swelling/fissures, strawberry tongue])
Kawasaki Disease	Health Maintenance, Patient Education, & Preventative Measures	MC in children (esp <5 YO), boys, Asians Complications: coronary artery aneurysm*, myocardial infarction
Malignant Hypertension	History Taking & Performing Physical Exam	High BP + signs of acute end organ damage --> (AMS, Retinopathy (papilledema), Renal disease, and proteinuria)
Mitral Regurg Intervention	Health Maintenance, Patient Education, & Preventative Measures	surgical valve repair when heart decompensates avoid stimulants, aerobic exercise; stress reduction May use BB if increased HR, palpitations, or nervousness
Mitral Stenosis	History Taking & Performing Physical Exam	MCC = rheumatic heart disease; pulm sxs: dyspnea (MC sx), pulm HTN; Afib, R-sided HF (due to prolonged pulm. HTN); Mitral facies PE: loud S1; opening snap; early-mid diastolic rumble @ apex (low-pitched) esp in LLD position; decrease murmur with valsalva, standing, inspiration; Increase murmur with laying supine, squatting, expiration, exercise, & LLD position
Mitral Valve Prolapse	History Taking & Performing Physical Exam	ask about connective tissue disorders (b/c assoc. with Marfan's, Ehlers-Danlos, Osteogenesis imperfecta); MC in young women (15-35YO); autonomic dysfunction (anxiety, atypical chest pain, panic attacks, palpitations, syncope); Hx of mitral regurg? PE: +/- Narrow AP diameter, low body wt., hypotension, scoliosis, pectus excavatum; check for murmur
Mitral Valve Prolapse	Clinical Intervention	ECHO shows posterior bulging leaflets Reassurance only (good prognosis). BB's only if autonomic dysfunction
Normal findings, EKG, pacemaker	Using Diagnostic & Laboratory Studies	Look for paced spikes followed by a P wave or QRS on EKG
Patent Ductus Arteriosus (PDA)	Formulating Most Likely Diagnosis	b/w descending thoracic aorta & pulmonary artery; L to R (noncyanotic); continuous machine-like murmur loudest @ pulmonic area (LUSB); wide pulse pressure, bounding pulses
Patent Ductus Arteriosus (PDA)	Pharmaceutical Therapeutics	NSAIDs will close PDA in a pre-term baby
Pericardial Effusion	Clinical Intervention	Observation if small & no evidence of tamponade. Tx the underlying cause. +/- Pericardiocentesis if tamponade or large effusion. Pericardial window drainage if recurrent
Pericarditis	Applying Basic Scientific Concepts	acute fibrinous inflammation of the pericardium; may cause on effusion; MC caused by virus (esp. Coxsackie & Echovirus) Chest pain worse when laying down; better when sitting up/leaning forward; pericardial friction rub
Pericarditis	History Taking & Performing Physical Exam	MC caused by virus (esp. Coxsackie & Echovirus) CP that is pleuritic (sharp & worse with inspiration), persistent, & postural (worse when supine & relieved by sitting/leaning forward) +/- radiates to trapezius/back; Fever usually present; pericardial friction rub
Peripheral Arterial Disease (PAD)	Pharmaceutical Therapeutics	Cilostazol - decreases platelet aggregation AND is a direct arterial vasodilator

PROBLEM	TASK CATEGORY	ANSWER
Peripheral Artery Disease (PAD)	History Taking & Performing Physical Exam	Claudication Ankle-Brachial Index (ABI)
Peripheral Artery Disease (PAD)	Formulating Most Likely Diagnosis	Intermittent claudication brought on by exercise/walking & relieved with rest; 6 P's; Pale on elevation, Dusky red with dependency (dependent rubor); ulcers on toes or points of trauma (Lateral malleolus); Muscle atrophy, thin/shiny skin, hair loss, thick nails, cool limbs, usually no edema, decreased capillary refill, decreased/absent pulses
Postpartum Cardiomyopathy	Using Diagnostic & Laboratory Studies	Echocardiogram & BNP (this is pregnancy-induced dilated cardiomyopathy)
Prinzmetal Variant Angina	Pharmaceutical Therapeutics	Sxs and ST elevations resolve with CCB or Nitro
Raynaud's Disease	Pharmaceutical Therapeutics	dihydro CCB (ex. Nifedipine)
Renal Artery Stenosis	Using Diagnostic & Laboratory Studies	1. Non-invasive: options include CT or MRA & Ultrasound 2. Renal arteriography: most definitive (gold standard). Do not use if renal failure is present.
Rheumatic Heart Disease	History Taking & Performing Physical Exam	GABHS (Strep pyogenes) infection; complication of rheumatic fever; JONES criteria + evidence of recent strep infection
Second Degree AV Heart Block (Mobitz type II)	Clinical Intervention	1.Atropine, 2.Temporary Pacing, 3. Definitive = permanent pacemaker
Secondary Hypertension	History Taking & Performing Physical Exam	Young person with sudden, severe HTN; Look for secondary causes such as abdominal bruits, signs of thyroid disease, low K+ (hyperaldosterone), abnormal pulses (coarctation), HTN refractory to an ACEI use (renal artery stenosis), or pheochromocytoma
Sick Sinus Syndrome	Using Diagnostic & Laboratory Studies	EKG: combination of sinus arrest with alternating paroxysms of atrial tachyarrhythmias & bradyarrhythmias
STEMI	Pharmaceutical Therapeutics	1. Reperfusion Therapy: PCI or Thrombolytics 2. Antithrombotics 3. Adjunctive Therapy: BB, ACEI, Nitrates, Morphine; K+/Mg+ repletion; statin therapy; monitor BP & glucose and decrease RF's
Superficial Thrombophlebitis	Pharmaceutical Therapeutics	Aseptic: NSAIDs; may consider Heparin & Warfarin if clot is near saphenofemoral junction Septic: IV abx: PCN + Gentamicin
Tetralogy of Fallot	Applying Basic Scientific Concepts	MC cyanotic heart disease RV outflow obstruction, RVH, VSD, & overriding aorta Test spells; CXR: boot-shaped heart
Tricuspid Regurg	Formulating Most Likely Diagnosis	Holosystolic blowing high-pitched murmur @ L-mid sternal border; No radiation; Increase murmur intensity with inspiration (Carvallo's sign) & with squatting
Unstable Angina	Using Diagnostic & Laboratory Studies	Exercise/Nuclear Stress Test
Unstable Angina	Clinical Intervention	MONA- morphine, oxygen, nitro, aspirin; if needed, revascularize with stent/PCI or CABG
Wolff-Parkinson-White (WPW)	Formulating Most Likely Diagnosis	wide complex QRS (>0.12 sec), shorted PR interval, Delta wave (slurred upstroke of QRS)
Wolff-Parkinson-White (WPW)	Clinical Intervention	1. Stable: vagal maneuvers --> procainamide 2. Unstable: synchronized cardioversion 3. Definitive: radiofrequency ablation (indicated if recurrent, symptomatic episodes)

PROBLEM	TASK CATEGORY	ANSWER
PULMONOLOGY		
Acute Bronchitis	Formulating Most Likely Diagnosis	inflammation of trachea/bronchi; often follows URI; MCC = Adenovirus; Hallmark = cough (+/- productive, lasts 1-3 weeks); CXR = normal or nonspecific
Acute Bronchitis	Clinical Intervention	Clinical dx unless pneumonia suspected --> if so, order CXR Mngmnt: 1. Symptomatic: fluids, rest, +/- bronchodilators; +/- antitussives only for adults 2. Abx if not responsive to conservative tx, cough > 7-10 days, elderly, COPD, immunocompromised
Acute Epiglottitis	Health Maintenance, Patient Education, & Preventative Measures	medical emergency; MC due to Hib (reduced incidence due to Hib vaccination-given at 2,4,6, &12-15 mo). MC in children 3 months-6 years old. Males 2x more common. DM is a risk factor in adults. Laryngoscopy is definitive diagnosis and provides direct visualization but may provoke spasm. If high suspicion, do NOT attempt to visualize the epiglottis with a tongue depressor in children. May be attempted in adults.
Acute Respiratory Distress Syndrome (ARDS)	Formulating Most Likely Diagnosis	MC in critically ill pts; 1. severe refractory hypoxemia = hallmark, 2. bilateral pulmonary infiltrates on CXR, 3. PCWP < 18 mm Hg
Acute Respiratory Distress Syndrome (ARDS)	Using Diagnostic and Laboratory Studies	1. ABG: PaO2/FIO2 ratio < 200 mm Hg that is not responsive to 100% O2 (refractory hypoxemia) 2. CXR: diffuse bilateral pulmonary infiltrates ("white out pattern"); usually spares the costophrenic angles 3. Cardiac Cath of Pulmonary Artery (Swanz-Ganz): PCWP < 18 mm Hg
Acute Respiratory Distress Syndrome (ARDS)	Clinical Intervention	Positive pressure ventilation: either intubation or BiPAP
Alpha-1 Antitrypsin Deficiency	Using Diagnostic and Laboratory Studies	only genetic disease linked to COPD in younger adults (<40 YO); associated with a panlobular emphysema Blood testing; COPD tests (PFT/Spirometry, CXR/CT scan, EKG)
Asbestosis	Using Diagnostic and Laboratory Studies	CXR: pleural calcifications/pleural plaques/pleural thickening; affects lower lobes primarily Biopsy: linear asbestos bodies
Aspergillosis	Applying Basic Scientific Concepts	a fungus found in garden and houseplant soil and compost; transmitted via inhalation; MC affects lungs, sinuses, and CNS; produces aflatoxin B1- assoc. with increased risk of hepatocellular carcinoma (HCC) Aspergilloma: incidental finding on CXR or cough + hemoptysis; "fungal ball"
Aspergillosis	Using Diagnostic and Laboratory Studies	Increased IgE & eosinophilia if allergic Biopsy: dusky, necrotic tissue (ex. nose) - septate hyphae with regular branching at wide angles (>45 degrees)
Aspergillosis	Clinical Intervention	1. Allergic: tapered corticosteroids, chest physiotherapy, +/- Itraconazole 2. Severe/Invasive Aspergillus or sinusitis: Voriconazole = DOC!; high-dose Itraconazole, Amphotericin B, Caspofungin 3. Aspergilloma: symptomatic surgical resection; asx = observation
Aspiration Pneumonia	Applying Basic Scientific Concepts	Anaerobes; MC in R lower lobe Klebsiella with severe alcoholics, debilitated, chronic illness, & aspirators; assoc. with cavitary lesions; currant jelly sputum
Asthma	Using Diagnostic and Laboratory Studies	Pulmonary Function Test = Gold Standard (shows reversible obstruction) Diagnosis with either 12% improvement in FEV1 after SABA administration or pt. gets 20% worse on provocation testing (Methacholine Challenge Test)
Asthma	Health Maintenance, Patient Education, & Preventative Measures	Decreasing risk factors such as tobacco smoke, air pollution, chemical irritants including perfumes, # of lower respiratory tract infections; Spacers for inhalers

PROBLEM	TASK CATEGORY	ANSWER
Asthma	Pharmaceutical Therapeutics	Acute Tx: 1. SABA, anticholinergics, PO steroids Chronic Tx: 1. Inhaled corticosteroids, 2. LABA, 3. ICS/LABA combo (ex. Symbicort, Advair diskus)
Asthma	History Taking and Performing Physical Exam	wheezing & prolonged expiratory phase; +/- cough that is worse at night
Atelectasis	Formulating Most Likely Diagnosis	MC cause of Post-Op fever day 1
Bacterial Tracheitis	Formulating Most Likely Diagnosis	inspiratory strider; increasing deep or barking croup cough post URI; "scratchy" feeling in throat; hoarseness; chest pain, fever, earache, headache, dizziness (light-headed); dyspnea (esp. worse at night)
Bronchiectasis	History Taking and Performing Physical Exam	impaired clearance of mucous --> lung infxns; recurrent/chronic lung infxns (H.flu MCC if not due to cystic fibrosis); daily chronic cough with thick, mucopurulent foul-smelling sputum; hemoptysis; persistent crackles at base of lungs; dyspnea, wheeze, rhonchi, clubbing
Bronchiectasis	Using Diagnostic and Laboratory Studies	study of choice is high-resolution CT scan; shows airway dilation "tram tracking" "signet ring sign" = pulmonary artery coupled with dilated bronchus PFT: Obstructive
Bronchogenic Carcinoma	Using Diagnostic and Laboratory Studies	1. CXR/CT Scan: often seen on CXR but not used for screening. CT used for staging. 2. Sputum Cytology: may be useful for central lesions 3. Bronchoscopy: useful for central lesions 4. Pleural fluid analysis 5. Transthoracic needle biopsy: useful for peripheral lesions. CT or fluoroscopy guided. 6. Mediastinoscopy
Chronic Bronchitis	History Taking and Performing Physical Exam	productive cough for 6 months out of the last 2 years; usually obese with leg edema ("blue bloaters") PE: rales (crackles), rhonchi, wheezing; +/- signs of cor pulmonale (peripheral edema, cyanosis)
Chronic Bronchitis	Health Maintenance, Patient Education, & Preventative Measures	1. quit smoking; 2. Vaccines (pneumococcal & flu); 3. pulmonary rehab; 4. Surgery; 5. Abx used in acute exacerbation of chronic bronchitis (Azithromycin shown to have anti-inflammatory properties in the lungs
Chronic Bronchitis	Pharmaceutical Therapeutics	*quit smoking* 1. Combo therapy with anticholinergics + B2 agonists 2. ICS -Never used alone! Add to a LABA (ICS + LABA) 3. O2 = only medical therapy to decrease mortality!
Chronic Obstructive Pulmonary Disease (COPD)	Pharmaceutical Therapeutics	Oxygen is the only medical therapy proven to decrease mortality Bronchodilators (anticholinergics/B2 agonists) Corticosteroids (inhaled corticosteroids NOT considered monotherapy- add to a LABA!) Abx with exacerbations
Chronic Obstructive Pulmonary Disease (COPD)	History Taking and Performing Physical Exam	cough, worsening dyspnea, progressive exercise intolerance, sputum production
Chronic Obstructive Pulmonary Disease (COPD)	Clinical Intervention	1. quit smoking; 2. Vaccines (pneumococcal & flu); 3. pulmonary rehab; 4. Surgery; 5. Abx used in acute exacerbation of chronic bronchitis (Azithromycin shown to have anti-inflammatory properties in the lungs
Cystic Fibrosis	Applying Basic Scientific Concepts	Autosomal recessive defect that prevents chloride transport (water movement out of cell) --> build up of thick, viscous mucus in lungs, pancreas, liver, intestines --> obstructive disease & exocrine gland dysfunction (ex. pancreatic insufficiency) Chromosome 7; life expectancy 30-49; MC affects Caucasians/Northern Europeans

PROBLEM	TASK CATEGORY	ANSWER
Cystic Fibrosis	Formulating Most Likely Diagnosis	Classic: young pt with bronchiectasis, recurrent respiratory infections/chronic sinusitis, pancreatic insufficiency (steatorrhea), growth delays & infertility Meconium Ileus @ birth
Cystic Fibrosis	Using Diagnostic and Laboratory Studies	sweat chloride > 60 mmol/L on 2 occasions after administration of Pilocarpine CXR: bronchiectasis (CF=MCC of bronchiectasis in US) PFT's: Obstructive (often irreversible) DNA analysis = definitive test; Genotyping Sputum cultures often grow Pseudomonas
Cystic Fibrosis	Pharmaceutical Therapeutics	1. airway clearance tx: bronchodilators, mucolytics, abx, decongestants 2. Pancreatic Enzyme Replacement (A,D,E,K) 3. Lung & Pancreatic transplant 4. Vaccines (Pneumococcal, Flu)
Emphysema	Pharmaceutical Therapeutics	1. Bronchodilators: Anticholinergics + B2 agonists 2. ICS + LABA 3. O2
Emphysema	History Taking and Performing Physical Exam	cig smoking?; MC sx = dyspnea; mild cough Hyperinflation: hyperresonance, decreased/absent breath sounds, decreased fremitus, barrel chest (increased AP diameter), quiet chest, pursed lip breathing Resp. alkalosis (resp. acidosis in acute exacerbation); cachectic; "pink puffer"
Empyema	Formulating Most Likely Diagnosis	A type of pleural effusion: grossly purulent/turbulent effusion (direct infection of the pleural space)
Empyema	Using Diagnostic and Laboratory Studies	1. CXR: PA/Lateral- blunting of costophrenic angles; LLD= best film/detects smaller effusions, empyemas 2. Thoracentesis = Test of Choice! 3. CT scan: to confirm empyema
Haemophilus influenzae Pneumonia	Applying Basic Scientific Concepts	2nd MCC of CAP; increased with underlying pulmonary disease (esp. COPD); gram (-) rods (bacilli); green sputum seen with H. flu & Pseudomonas; lobar pneumonia
Influenza	Clinical Intervention	1. Supportive: ex. acetaminophen or salicylates, rest 2. Antivirals usually only needed in pts with high risk complications or if hospitalized. Best if initiated within 48 hrs of sx onset - Neuraminidase inhibitor: Oseltamivir (Tamiflu)
Influenza	Using Diagnostic and Laboratory Studies	Usually a clinical dx; rapid influenza test (nasal swab) or viral culture
Influenza	Health Maintenance, Patient Education, & Preventative Measures	influenza vaccine given annually (in Oct/Nov) Trivalent vaccine: CI if allergy to eggs, gelatin, or thimerosal Intranasal (live attenuated): CI if prego or >50YO
Klebsiella Pneumonia	Applying Basic Scientific Concepts	severe alcoholics, debilitated, chronic illness, aspirators; cavitary lesions; current jelly sputum Upper lobe (esp. R upper lobe) with bulging fissures, cavitations --> Klebsiella
Legionella Pneumonia	Using Diagnostic and Laboratory Studies	associated with GI sxs, Increased LFT's, & hyponatremia Send Legionella urine antigen +/- PCR
Legionella Pneumonia	Pharmaceutical Therapeutics	Levofloxacin (Levaquin) or Azithromycin (Zithromax)
Lung Cancer	Applying Basic Scientific Concepts	MCC of cancer deaths in men & women; MCC= cig smoking (includes 2nd hand); 2nd MCC = asbestosis; Adenocarcinoma = MC type of lung cancer; greatest tendency to METS to brain, bone, liver, LN, and adrenals
Lung Cancer	Formulating Most Likely Diagnosis	cough, chest pain, SOB, unexplained wt. loss, sometimes hemoptysis (in small & squamous cell)
Lung Disease, Restrictive	Using Diagnostic and Laboratory Studies	PFT: Decreased lung volumes (decreased TLC, RV, RV/TLC, FRC, FVC); Normal or Increased FEV1/FVC Decreased compliance

PROBLEM	TASK CATEGORY	ANSWER
Negative Pressure Pulmonary Edema	Clinical Intervention	seen in post-extubation laryngospasm; must open the airway
Normal Anatomy, Neurovascular Bundle	Clinical Intervention	Needle decompression, chest tubes go over the rib to avoid neurovascular bundle
Obstructive Sleep Apnea	Clinical Intervention	Childhood sleep apnea: adenotonsillectomy + wt. normalization = 1st line Adults: CPAP machine; surgery is uvulopalatopharyngoplasty
Pertussis	Applying Basic Scientific Concepts	aka Whooping Cough; due to Bordetella pertussis
Pertussis	Formulating Most Likely Diagnosis	1. Catarrhal phase (URI sxs for 1-2 weeks; most contagious) --> 2. Paroxysmal phase (cough fits, inspiratory whoop, +/- post-tussive emesis for 2-4 weeks) -->3. Convalescent phase
Pertussis	Clinical Intervention	1. Supportive = mainstay of tx (O2, nebulizers, ventilation as needed) 2. Abx: shortens duration if started within the first 7 days of sx onset. Macrolides (Erythromycin, Azithromycin); TMP-SMX (Bactrim) 2nd line if allergic
Pertussis	Health Maintenance, Patient Education, & Preventative Measures	Prevention: DTaP/Tdap Complications: include pneumonia, encephalopathy, otitis media, sinusitis, and seizures. Highly contagious (esp. during catarrhal phase) Macrolides given to exposed contacts
Pertussis	Using Diagnostic and Laboratory Studies	PCR of Nasopharyngeal swab = gold standard
Pleural Effusion	Applying Basic Scientific Concepts	abnormal accumulation of fluid in pleural space Transudate: due to either increased hydrostatic pressure &/or decreased oncotic pressure (CHF = MCC of transudate) Exudative: due to increased vascular permeability (ex. infxn/inflammation); contains increased plasma proteins, WBC's, platelets, +/- RBC's
Pleural Effusion	History Taking and Performing Physical Exam	Clinically asx; if sxs, usually dyspnea, "pleuritic" chest pain, cough PE: decreased tactile fremitus, decreased breath sounds, dullness to percussion; +/- pleural friction rub
Pleural Effusion	Using Diagnostic and Laboratory Studies	1. CXR: PA/Lateral- blunting of costophrenic angles; LLD= best film/detects smaller effusions 2. Thoracentesis = Test of Choice! 3. CT scan: to confirm empyema
Pleural Effusion	Clinical Intervention	1. Tx underlying condition. Diuretics, restrict sodium 2. Thoracentesis = Gold Standard (Diagnostic & Therapeutic) 3. Chest tube pleural fluid drainage if empyema 4. Pleurodesis: if malignant or chronic (Talc (MC used), Doxy)
Pleurisy	Formulating Most Likely Diagnosis	sharp, stabbing, burning or dull pain in the R or L side of the chest during breathing, especially when one inhales & exhales/laughs
Pneumococcal Pneumonia	Applying Basic Scientific Concepts	MCC of CAP; gram (+) cocci in pairs (diplococci); single rigor, pleuritic chest pain; bronchial breath sounds, dullness to percussion, increased tactile fremitus, + egophay; inspiratory rales; rusty (blood-tinged) sputum
Pneumococcal Pneumonia	Pharmaceutical Therapeutics	combination of beta-lactam (Ceftriaxone/Amoxicillin/Amox-Clav) + Macrolide (Azithromycin)
Pneumococcal Pneumonia	Health Maintenance, Patient Education, & Preventative Measures	Prevnar 13 to kids < 20 YO >65 YO pts get Prevnar 13 then Pneumovax 23 Anyone with > risks of infection (i.e. COPD or DM) between 2-65 gets immunized
Pneumoconiosis	Formulating Most Likely Diagnosis	Chronic Fibrosis --> inhalation of mineral dusts Silicosis: mining, quarry work with granite/slate/quartz, pottery or sandblasting Pneumoconiosis: "Black lung disease" Berylliosis: aerospace, ceramics, tools, & dye; increased risk of lung, stomach, colon cancer Byssinosis: "Brown lung disease" due to cotton exposure Asbestosis: long-term exposure to asbestosis with increased risk of malignant mesothelioma or pleura & bronchogenic carcinoma

PROBLEM	TASK CATEGORY	ANSWER
Pneumocystis jiroveci Pneumonia (PCP)	Pharmaceutical Therapeutics	1. TMP-SMX (Bactrim) = DOC x 21 days +/- add Prednisone if hypoxic 2. Sulfa allergy --> Dapsone-Trimethoprim PCP Prophylaxis in HIV pts: give TMP-SMX when CD4 < 200
Pneumonia	Applying Basic Scientific Concepts	Findings on PE: dullness to percussion, increased tactile fremitus, + egophony, bronchial breath sounds
Pneumothorax	Formulating Most Likely Diagnosis	Primary: no underlying lung disease; mainly affects tall, thin males 20-40YO, smokers, + family hx Secondary: + underlying lung disease without trauma (ex. COPD, asthma). Traumatic: Iatrogenic (ex. during CPR, thoracentesis, PEEP (ventilation), subclavian line placement) or other trauma (ex. car accident, etc.) Tension: positive air pressure pushes lungs, trachea, great vessels & heart to the contralateral side. Immediately life threatening. Catamenial PTX: occurs during menstruation (ectopic endometrial tissue in the pleura) Chest pain (pleuritic, unilateral, non-exertional, sudden onset), dyspnea, hyperresonance to percussion, decreased fremitus, decreases breath sounds over affected side; Tension PTX: increased JVP, pulsus paradoxus, hypotension (present in shock)
Pneumothorax	Clinical Intervention	Small Simple = observe for at least 6 hrs. with repeat CXR to affirm no progression + 24-48 hrs follow-up Symptomatic = chest tube (tube thoracostomy) If in shock (Tension PTX) = immediate needle thoracostomy
Pulmonary Embolism	History Taking and Performing Physical Exam	Dyspnea = MC sx; Tachypnea = MC sign 1. dyspnea, 2. pleuritic chest pain, & 3. hemoptysis PE: pulmonary exam usually normal (may have rales or pleural friction rub); (+) Homan's sign
Pulmonary Embolism	Using Diagnostic and Laboratory Studies	1. Helical CT Scan (CT-PA) = best initial test for suspected PE; 2. VQ Scan;3. Pulmonary Angiogram = Gold Standard; 4. Doppler US
Pulmonary Embolism	Clinical Intervention	Hemodynamically Stable: 1. anticoagulation or 2. If anticoagulation is CI --> IVC filter; Unstable: 1. Thrombolytics or 2. If thrombolytics CI --> embolectomy
Pulmonary Fibrosis	Applying Basic Scientific Concepts	Chronic progressive interstitial scarring (fibrosis)from persistent inflammation, causing loss of pulmonary function with restrictive component of unknown cause
Pulmonary Fibrosis	History Taking and Performing Physical Exam	dyspnea and/or nonproductive cough (usually gradual onset); PE: fine bibasilar inspiratory crackles, clubbing of the fingers, +/- cyanosis
Pulmonary Fibrosis	Using Diagnostic and Laboratory Studies	1. CXR/CT Scan: diffuse reticular opacities (honeycombing*), ground glass opacities 2. Biopsy: honeycombing (large cystic airspaces) PFT: restrictive disease
Pulmonary Fibrosis	Clinical Intervention	No effective tx! Strategies include: quit smoking, O2, corticosteroids in some acute exacerbations; Lung transplant = only cure!
Pulmonary Hypertension	Formulating Most Likely Diagnosis	dyspnea, chest pain, weakness, fatigue, cyanosis, syncope, edema, accentuated increased S2 (+/- fixed or paradoxically split S2); signs of R-sided HF: Increased HVP, peripheral edema, ascites, systolic ejection click, RV heave, +/- pulmonary regurg
Pulmonary Hypertension	Using Diagnostic and Laboratory Studies	CXR: enlarged pulmonary arteries EKG: cor pulmonale (RVH, Right axid deviation) Right Heart Cath: Mean Pulmonary Artery Pressure > 25 @ rest (>30 with exercise)
Pulmonary Nodule	Using Diagnostic and Laboratory Studies	1. Observation: if low malignant probability; active surveillance. CT may be used to assess the lesion initially & evaluate surrounding tissues. 2. Transthoracic needle aspiration or bronchoscopy: intermediate probability. Needle aspiration often for peripheral lesions; Bronchoscopy for central lesions. 3. Resection with biopsy: preferred if high probability of malignancy
Sarcoidosis	Formulating Most Likely Diagnosis	Increased incidence in African-Americans; dry (nonproductive) cough; painless hilar lymphadenopathy; erythema nodosum; lupus pernio; anterior uveitis

PROBLEM	TASK CATEGORY	ANSWER
Sarcoidosis	Using Diagnostic and Laboratory Studies	CXR showing hilar lymph nodes; elevated ACE levels; Tissue biopsy: non-caseating granulomas; PFT's: primarily used to monitor tx response); Hypercalciuria/ Hypercalcemia; Increased IgG, Increased ESR
Sarcoidosis	Clinical Intervention	1. Observation: most have spontaneous remission in 2 years and require no tx 2. Oral Corticosteroids = treatment of choice when tx is needed 3. Methotrexate: steroid alternative or for steroid-refractory cases 4. Hydroxychloroquine: for chronic disfiguring skin lesions 5. NSAIDs for musculoskeletal sxs & erythema nodosum 6. Single lung transplant in severe cases
Silicosis	Formulating Most Likely Diagnosis	sand-blasting/quarry work/pottery, etc. Small round opacities throughout lungs- "eggshell calcifications" of hilar and mediastinal lymph nodes; usually affects upper lobes
Silicosis	Clinical Intervention	No effective tx. Supportive: bronchodilators, O2, influenza/pneumococcal vaccine, +/- corticosteroids, pulm rehab
Smoke Inhalation	Pharmaceutical Therapeutics	O2 100% non-rebreather 10-12 L/min until carboxyhemoglobin < 10% may needs meds if any heart dysrhythmias,angina, seizures, AMS,etc.
Smoke Inhalation	Applying Basic Scientific Concepts	Carbon monoxide poisoning is presumed in any pt with smoke inhalation until proven or excluded by carboxyl-hemoglobin level on ABG or VBG
Superior Vena Cava Syndrome	Formulating Most Likely Diagnosis	This is a cancer pushing on the SVC. +JVD. Characteristic features are edema (swelling due to excess fluid) of the face and arms and development of swollen collateral veins on the front of the chest wall; facial plethora
Tuberculosis	Formulating Most Likely Diagnosis	cough lasting 3 weeks, pain in chest, hemoptysis, night sweats, fever, chills, wt. loss; cavitations on CXR (caseating granulomas); Pts with latent TB will not present with sxs and cannot spread infxn to others

PROBLEM	TASK CATEGORY	ANSWER
GASTROINTESTINAL		
Achalasia	Achalasia	Decrease LES pressure: botulinum toxin injection, Nitrates, CCB's
Acute Hepatitis B	Using Diagnostic and Laboratory Studies	(+) HBsAg, (-) anti-HBs, anti-HBc:IgM, HBeAg +/- in acute Hep B; Anti-HBe +/- in acute Hep B
Alcoholic Liver Disease	Using Diagnostic and Laboratory Studies	Check: total bili, serum albumin, PT/INR; ascites, hepatic encephalopathy, portal HTN leading to esophageal varices Ultrasound determines liver size & evaluate for hepatocellular carcinoma. Liver biopsy.
Anorectal Abscess	Clinical Intervention	I&D followed by warm water cleansing, analgesics, sitz baths, high fiber diet
Ascites	Clinical Intervention	sodium restriction/spironolactone; diuretic resistant ascites may need TIPS procedure.
Benign Neoplasm, Colon	Health Maintenance, Patient Education, and Preventative Measures	Avoid diets that are low in fiber/high in red/processed meat; smoking, ETOH; Colon Cancer Screening: fecal occult blood testing annually; colonoscopy q10y from age 50-75 (individualized after 75); Flex sigmoidoscopy q5y along with fecal occult blood testing q3y.
Bezoar	Formulating the Most Likely Diagnosis	a solid mass of indigestible material that accumulates in the digestive tract, sometimes causing blockage. Typically forms in the stomach or sometimes the small intestines. Can occur in children and adults.
Biliary Tract Obstruction	Using Diagnostic and Laboratory Studies	Common bile duct dilation on ultrasound of RUQ and elevated total bilirubin
Boerhaave Syndrome, rupture of esophagus	Formulating the Most Likely Diagnosis	Full thickness rupture of the distal esophagus; associated with repeated, forceful vomiting (ex. bulimia) or iatrogenic perforation of the esophagus during endoscopy procedure. Retrosternal chest pain worse with deep breathing & swallowing, hematemesis, crepitus due to pneumomediastinum
Bowel Perforation due to Colonoscopy	History Taking and Performing Physical Exam	Persistent abdominal pain/distention that later progresses to peritonitis --> rebound/guarding/rigidity. There will be free air under the diaphragm (pneumoperitoneum).
Budd-Chiari Syndrome	Formulating the Most Likely Diagnosis	condition caused by thrombotic or nonthrombotic obstruction of the hepatic venous outflow; characterized by hepatomegaly, ascites, and RUQ abdominal pain; rapid development of acute liver disease (including jaundice & hepatosplenomegaly) MC in women 20's-30's.
Celiac Disease (Sprue)	Health Maintenance, Patient Education, and Preventative Measures	gluten free diet (avoid wheat, rye, barley); oats, rice, or corn are fine. Vitamin supplements; corticosteroids if refractory to conservative tx.
Cholangitis	Formulating the Most Likely Diagnosis	gallbladder (cystic duct) obstruction --> inflammation/infxn; RUQ pain continuous in duration; Fever, enlarged palpable gallbladder (Murphey's sign); (+) Boas sign
Choledocholithiasis	Applying Basic Concepts	gallstones in the common bile duct; complications include acute pancreatitis and acute cholangitis
Choledocholithiasis	Clinical Intervention	ERCP often diagnostic and therapeutic
Cholelithiasis	Health Maintenance, Patient Education, and Preventative Measures	RF's: 5 F's (fat, fair, female, forty, fertile); complications include choledocolithiasis, acute cholangitis, and acute cholecystitis
Chronic Hepatitis	History Taking and Performing Physical Exam	cirrhosis that leads to hepatic encephalopathy, varices, ascites, edema
Chronic Hepatitis C	Health Maintenance, Patient Education, and Preventative Measures	Pts at risk for hepatocellular carcinoma (HCC)- screen via serum alpha-fetoprotein & ultrasound

PROBLEM	TASK CATEGORY	ANSWER
Cirrhosis	Pharmaceutical Therapeutics	Tx encephalopathy with lactulose Tx ascites with sodium restriction/spironolactone Tx pruritus with cholestyramine
Colon Cancer	Applying Basic Concepts	3rd MCC of cancer-related deaths in the US; Patho: progression of adenomatous polyp into malignancy (adenocarcinoma) usually occurs within 10-20 years. MC site of metastatic spread is the liver (also lungs and lymph nodes). RF's: genetics (ex. familial adenomatous polyposis), age > 50 YO, UC > Crohn's; diet (low fiber; high in red meats/processed meats); smoking, ETOH, African Americans.
Constipation	Clinical Intervention	Fiber: MOA = retains H2O & improves GI transit; Bulk Forming Laxatives: (psyllium, methylcellulose, polycarbophil, wheat dextran) MOA = absorbs H2O & increases fecal mass. Most physiologic and effect approach to constipation. SE = flatulence, bloating Osmotic Laxatives: (polyethylene glycol/Miralax) MOA = causes H2O retention in stool OR Lactulose; SE = bloating, flatulence. Also used in hepatic encephalopathy Sorbitol: SE = bloating, flatulence Saline Laxatives: (milk of magnesia, magnesium citrate) SE = Hypermagnesemia (esp in pts with chronic renal dz) Stimulant Laxatives: (bisacodyl, senna) MOA = directly irritate gut wall OR cisapride, tegaserod- MOA = stimulates peristalsis
Diffuse Esophageal Spasm	History Taking and Performing Physical Exam	stabbing chest pain that is worse with hot or cold foods/liquids; dysphagia
Diverticular Disease	Using Diagnostic and Laboratory Studies	Test of Choice = CT scan
Diverticulitis	Clinical Intervention	NPO and IV Abx (Ciprofloxacin or Bactrim + Metronidazole); clear liquid diet/high fiber diet, fiber supplements; surgery if complications such as abscess or perforation
Duodenal Peptic Ulcer	Pharmaceutical Therapeutics	1. H. pylori eradication: triple therapy- Clarithromycin + Amoxicillin + PPI; Metronidazole if PCN allergic. 2. H. pylori negative: OTC antacids, H2 blockers, PPI's, Misoprostol, Bismuth Compounds, Sucralfate
Erosive Gastritis	History Taking and Performing Physical Exam	Hx of H.pylori, NSAIDs/Aspirin, Acute stress, heavy alcohol consumption, reflux, medications, radiation, trauma, corrosives, etc. May be asx +/- epigastric pain, N/V, anorexia +/- upper GI bleed (hematemesis, melena) but bleeding is typically minimal.
Esophageal Cancer	History Taking and Performing Physical Exam	Hx of tobacco/ETOH use, exposure to noxious stimuli; Adenocarcinoma is a complication of GERD leading to Barrett's; dysphagia to solids --> fluids, odynophagia, wt. loss, chest pain
Esophageal Cancer	Using Diagnostic and Laboratory Studies	Dx via upper endoscopy with biopsy Hypercalcemia assoc. with squamous
Esophageal Cancer	Health Maintenance, Patient Education, and Preventative Measures	Avoid ETOH, tobacco, and other irritating things. Get Gardasil to protect vs. HPV
Esophageal Ring	Using Diagnostic and Laboratory Studies	Barium esophagram = diagnostic test of choice
Esophageal Varices	Clinical Intervention	To decrease portal HTN, we use a BB. Use Octreotide (or somatostatin or terlipressin) and balloon tamponade followed by cyanoacrylate injection, transjugular intrahepatic portosystemic shunt (TIPS) placement, or surgery.
Esophagus Perforation	Formulating the Most Likely Diagnosis	May present with hematemesis, tachycardia, difficulty breathing; can be a complication of procedures (ex. EGD)
Familial Adenomatous Polyposis	Health Maintenance, Patient Education, and Preventative Measures	High incidence of cancer; annual colonoscopies starting @ age 10-12 with flex sig. Prophylactic colectomy best for survival.

PROBLEM	TASK CATEGORY	ANSWER
Fatty Liver	Formulating the Most Likely Diagnosis	Often asx; usually associated with metabolic syndrome; often found w/ elevated liver aminotransferases or when hepatic steatosis was detected incidentally on abdominal imaging
Food Poisoning, Vibrio Cholerae	Applying Basic Concepts	Toxin activates enzyme in small intestine leading to hypersecretion of water and chloride; leads to severe diarrhea/dehydration; Gram (-) rod transmitted via contaminated food & water. Outbreaks associated with poor sanitation & overcrowding (esp. abroad).
Foreign Body Mouth/Esophagus/ Stomach	History Taking and Performing Physical Exam	usually in kids 6 months-3 years old. Sudden dysphagia; plan film x-ray helpful if metal
Foreign Body, Stomach	Clinical Intervention	Depends on what it is. Button battery in a child requires endoscopy as it will burn. Coins pass on their own. Confirm it's not airway compromising.
G6PD Deficiency	Formulating the Most Likely Diagnosis	X-linked recessive trait; affects primarily African-American males; most pts asx until times of oxidative stress (ex. infxns, fava beans, sulfa drugs): episodic acute hemolytic anemia- back or abdominal pain, jaundice, dark urine, splenomegaly
Gastric Adenocarcinoma	Using Diagnostic and Laboratory Studies	Labs show microcytic anemia consistent with bleeding; elevated LFT's if METS to liver; Endoscopy to dx via biopsy.
Gastrointestinal Hemorrhage	Using Diagnostic and Laboratory Studies	Nasogastric lavage; stool OB, type and cross for possible transfusion and look at clotting studies
Gastroparesis	Formulating the Most Likely Diagnosis	Delayed gastric emptying, yet no mechanical obstruction; N/V, early satiety, belching, bloating, and/or upper abdominal pain; Often seen in DM.
Giardiasis	Pharmaceutical Therapeutics	Metronidazole/tinidazole & nitazoxamide; Albendazole or Mebendazole are also options
Hemorrhoid	Clinical Intervention	1. Conservative: high-fiber diet, increase fluids. Warm Sitz baths & topical rectal corticosteroids 2. If failed conservative management, debilitating pain, strangulation, or irreducible: procedures include rubber band ligation (MC), sclerotherapy, or infrared coagulation. 3. Hemorrhoidectomy: for all stage IV or those not responsive to above treatments.
Hepatitis A	Clinical Intervention	self-limiting (symptomatic tx); usually recover within weeks.
Hepatitis A	Health Maintenance, Patient Education, and Preventative Measures	Post-exposure prophylaxis for close contacts = HAV immune globulin Pre-exposure prophylaxis: Hep A vaccine may be given to population @ high risk
Hepatitis B	Health Maintenance, Patient Education, and Preventative Measures	Hep B vaccine given at 0, 1, & 6 months. CI if allergic to Baker's yeast.
Hepatitis C	Applying Basic Concepts	inflammation --> scarring --> fibrosis --> death Transmission via Parenteral (IV drug use, blood transfusions); 80% of pts develop chronic infxn
Hepatitis C	Using Diagnostic and Laboratory Studies	HCV RNA is more sensitive than HCV antibody. Anti-HCV becomes (+) in 6 weeks. It does not imply recovery, because it may become (-) after recovery Acute HCV: (+) HCV RNA; +/- Anti-HCV Resolved HCV: (-) HCV RNA; +/- Anti-HCV Chronic HCV: (+) HCV RNA; (+) Anti-HCV
Hirschsprung Disease	Using Diagnostic and Laboratory Studies	1. Anorectal Manometry: initial screening test 2. Contrast enema: transition zone (caliber change) b/w affected/unaffected bowel 3. Abdominal radiographs: decreased/absence of air in rectum & dilated bowel loops. 4. Rectal Biopsy = Definitive
Hypercalcemia	Pharmaceutical Therapeutics	IV saline --> Furosemide = 1st line; calcitonin, bisphosphonates in severe cases (IV pamidronate)

PROBLEM	TASK CATEGORY	ANSWER
Ileus	Clinical Intervention	Needs NPO and have NG tube placed; electrolyte/fluid replacement; tx underlying cause
Indirect Inguinal Hernia	Formulating the Most Likely Diagnosis	protrudes at internal inguinal ring; origin of the sac is lateral to the inferior epigastric artery; follows testicle tract into scrotum; often congenital due to patent process vaginalis; MC overall type in men and woman; R-sided more common
Infectious Diarrhea	Applying Basic Concepts	1. Noninvasive (Enterotoxin) Infectious Diarrhea: vomiting, watery voluminous stools (involves small intestine); no fecal WBC's or blood (ex. Staph aureus, Bacillus cereus, vibrio cholerae, Enterotoxigenic E. coli, C. dif) 2. Invasive Infectious Diarrhea: increased fever, (+) blood & fecal WBC's, not a voluminous (large intestine); mucus; Do not give antimotility drugs (ex. Campylobacter, Shigella, Salmonella, Yersinia, Enterohemorrhagic E. coli)
Inflammatory Bowel Disease	Pharmaceutical Therapeutics	Amino salicylates (sulfasalazine, mesalamine) --> corticosteroids for acute flares --> immune modifying agents --> anti-TNF agents
Inguinal Hernia	Applying Basic Concepts	Protrusion of the contents of the abdominal cavity through the inguinal canal. Indirect & direct are determined by their relation to the inferior epigastric vessels.
Irritable Bowel Syndrome (IBS)	Applying Basic Concepts	abnormal motility: chemical imbalance in gut (serotonin, acetylcholine); chronic, functional idiopathic disorder with no organic cause. Onset MC in late teens/early 20's; MC in women.
Irritable Bowel Syndrome (IBS)	Clinical Intervention	Lifestyle mods: smoking cessation, low fat/unprocessed foods. Avoid beverages with sorbitol or fructose (ex. apples, raisins); avoid cruciferous vegetables. Sleep/regular exercise. Diarrhea: Anticholinergics/spasm (ex. Dicyclomine); antidiarrheal (ex. Loperamide) Constipation: Prokinetic, bulk-forming laxatives, saline or osmotic laxative. Lubiprostone TCA (Amitriptyline) or SSRI for intractable pain.
Jaundice	Health Maintenance, Patient Education, and Preventative Measures	If no pain, this is cancer until proven otherwise. They need imaging. Consider Gilbert Syndrome (benign prognosis) and neonatal jaundice. Phototherapy is the most commonly used intervention to tx and prevent severe hyperbilirubinemia.
Liver Cirrhosis	History Taking and Performing Physical Exam	ETOH = MCC in the US. Chronic viral hepatitis (esp. HCV), Non-alcoholic Fatty Liver Disease, Hemochromatosis, etc. General sxs: fatigue, weakness, wt. loss, muscle cramps; PE: ascites, hepatosplenomegaly, gynecomastia, spider angioma, caput medusa, muscle wasting, jaundice; hepatic encephalopathy, asterixis; esophageal varices, spontaneous bacterial peritonitis
Liver Cirrhosis	Applying Basic Concepts	ETOH = MCC in the US. Chronic viral hepatitis (esp. HCV), Non-alcoholic Fatty Liver Disease, Hemochromatosis, etc.
Malabsorption Syndrome	Clinical Intervention	gluten free diet if due to Celiac Disease; chronic diarrhea due to proximal small bowel bacterial overgrowth is tx'ed with oral broad-spectrum abx (ex. Metronidazole); Rifaximin effective in adults. Malabsorption secondary to short gut needs to be tx'ed aggressively. Children with chronic diarrhea secondary to bile acid malabsorption: use of cholestyramine to bind bile acids may help reduce duration and severity of diarrhea. Any loss of pancreatic enzymes can be replaced with oral supplements. Can try an elimination diet, avoiding offending food antigens if allergic. May refer children to pediatric gastroenterologist.
Malnutrition	Clinical Intervention	If due to anorexia nervosa: 1. hospitalization required for <75% expected body weight or pts who have medical complications; 2. Cognitive behavioral therapy, supervised meals, weight monitoring; 3. if depressed: SSRI's; atypical antipsychotics
Megacolon (Hirschsprungs)	Health Maintenance, Patient Education, and Preventative Measures	constipated from birth; meconium ileus; sensation that they have to have a BM (tenesmus)
Neuroleptic Malignant Syndrome	Pharmaceutical Therapeutics	Prompt discontinuation of drug is most important tx. Supportive care: cooling blankets for fever, ventilator support if needed, IV fluids; Dopamine agonists: Bromocriptine or Amantadine Dantrolene: skeletal muscle relaxer for muscle rigidity, fever.

PROBLEM	TASK CATEGORY	ANSWER
Newborn, Jaundice	Clinical Intervention	1. Phototherapy when bili>15 or if levels fail to decrease 2. Exchange transfusion: used in severe cases, ABO incompatibility, RH isoimmunization & hemolysis (ex. 1st 24 hrs of life)
Nonalcoholic Fatty Liver Disease	Using Diagnostic and Laboratory Studies	elevated ALT/AST; hepatic steatosis often incidentally detected on abdominal imaging (ex. ultrasound) obesity, DM, & hypertriglyceridemia
OD- Ethylene Glycol	Pharmaceutical Therapeutics	Block alcohol dehydrogenase with ethanol or fomepizole
Organophosphate Poisoning	Pharmaceutical Therapeutics	Atropine and oxime therapy (typically Pralidoxime)
Paralytic Ileus	Formulating the Most Likely Diagnosis	aka Post-op ileus; No bowel sounds and no flatus; No BM
Peptic Ulcer Disease	Pharmaceutical Therapeutics	OTC antacids --> then H2RI's --> then PPI's; if due to H. pylori: triple abx therapy
Pneumoperitoneum	Formulating the Most Likely Diagnosis	Something perforated (usually appendix, diverticulum, or peptic ulcer); Most sensitive test is free air under diaphragm.
Portal Hypertension	History Taking and Performing Physical Exam	MCC = cirrhosis; Hx: jaundice, hx of blood transfusions of IV drug use, pruritus, Fm hx of hereditary liver disease (hemochromatosis, Wilson's dz), hx of ETOH, high-risk sexual behavior, NASH; assess RF for UGI bleed: PUD, ETOH, NSAIDs, vomiting recently PE: check BP, look for signs of caput medusa, hemorrhoids, shifting dullness/fluid wave, spider angiomas, asterixis, splenomegaly, pallor, venous hum, check stool
Post Gastric Surgery Syndrome	Health Maintenance, Patient Education, and Preventative Measures	Initiate post-gastrectomy diet: high in protein; low in carbs/concentrated sweets; 5-6 small meals, with limited fluid intake during meals. Monitor for complications including anemia as a result of Vit B12 or iron malabsorption and osteoporosis. May need Vit B12 shots monthly/oral iron and calcium supplements
Pseudomembranous Colitis	Formulating the Most Likely Diagnosis	copious watery stools, sometimes mucus or blood, after recent abx use; lower abdominal pain/cramps, low-grade fever, nausea, anorexia
Pseudomembranous Colitis	Pharmaceutical Therapeutics	Mild Disease: 1st line is Metronidazole; 2nd line is PO Vanc Severe Disease: 1st line is PO Vanc
Short Bowel Syndrome	Clinical Intervention	Often initially fed by TPN to prevent malnutrition +/- concurrently with enteral nutrition; fluid and electrolyte replacement; provide frequent small meals and slowly advance the diet as tolerated
Small Bowel Obstruction	History Taking and Performing Physical Exam	MCC = post-surgical adhesions; 2nd MC = incarcerated hernias PE: abdominal distention; hyperactive bowel sounds early --> hypoactive bowel sounds later.
Small Bowel Obstruction	Using Diagnostic and Laboratory Studies	Abdominal Radiograph: air fluid levels in step ladder pattern, dilated bowel loops. Minimal gas in colon if complete obstruction.
Small Bowel Obstruction	Clinical Intervention	Requires IV fluids and NGT suction & NPO; if strangulated: surgical intervention
Steatohepatitis	Clinical Intervention	reduce total cholesterol, maintain healthy weight, control DM, stop/cut back on ETOH, exercise regularly. Ensure pt. is not on any medications that can further worsen liver function.
Ulcerative Colitis	Clinical Intervention	Flex sig = test of choice in acute disease; surgery is curative
Ulcerative Colitis	Health Maintenance, Patient Education, and Preventative Measures	Smoking decreases risk for UC; surgery is curative; colonoscopy and barium enema contraindicated in acute disease; associated with Primary Sclerosing Cholangitis

PROBLEM	TASK CATEGORY	ANSWER
Vitamin B12 Deficiency	Formulating the Most Likely Diagnosis	Neuro sxs: paresthesias, gait abnormalities, memory loss, dementia; GI: anorexia, diarrhea; glossitis; Macrocytic anemia (increased MCV) with hypersegmented neutrophils
Vitamin B12 Deficiency	Pharmaceutical Therapeutics	IM or PO B12; IM B21 for pernicious anemia
Vitamin Deficiency, Riboflavin	Formulating the Most Likely Diagnosis	Oral-Ocular-Genital Syndrome. Oral: lesions of mouth, magenta colored tongue, angular cheilitis, pharyngitis. Ocular: photophobia, corneal lesions. Genital: scrotal dermatitis
Vitamin K Deficiency	Using Diagnostic and Laboratory Studies	Prolonged PT (INR>3.5), Normal fibrinogen, Normal platelets
Wilson Disease	Using Diagnostic and Laboratory Studies	Decreased Ceruloplasmin, Increased urinary copper excretion
Zollinger-Ellison Syndrome	Using Diagnostic and Laboratory Studies	1. Increased fasting gastrin level = best screening test 2. (+) secretin test 3. Increased basal acid output; increased chromogranin A 4. Somatostatin Receptor Scintigraphy helpful in localizing tumor

PROBLEM	TASK CATEGORY	ANSWER
MUSCULOSKELETAL		
Acute Compartment Syndrome	Clinical Intervention	Emergent fasciotomy
Acute Compartment Syndrome	Formulating Most Likely Diagnosis	MC after fracture of long bones, crush injuries, tight casts/pressure dressings, thermal burns; pain out of proportion to injury (persistent/deep/burning); Increased compartmental pressure > 30-45 mm Hg
Adhesive Capsulitis	Formulating Most Likely Diagnosis	aka Frozen Shoulder Syndrome: a painful/stiff shoulder. Restriction of both active & passive ROM that occurs in the absence of a known intrinsic shoulder disorder; pain (dull/aching) w/ shoulder movement; nagging pain @ night with inability to sleep on affected side; esp. unable to externally rotate. Later on, the pain is less pronounced, but pt unable to reach over their head, to their side, or scratch their back or put on a coat.
Amputated Digit	Clinical Intervention	When there is a possibility for replantation, the amputated portion of the upper extremity should be wrapped in gauze and soaked in sterilized isotonic saline to prevent it from drying. In addition, it should be placed in a plastic bag that is immersed in ice water for cooling. An amputated extremity should never be placed directly in ice water because the infiltration of fluid into the part may jeopardize the microcirculation
Anterior Cruciate Ligament (ACL) injury	History Taking and Performing Physical Exam	MOI: non-contact pivoting injury (deceleration, hyperextension, internal rotation); associated with a "pop & swelling --> hemarthrosis" +/- knee buckling, inability to bear weight. Does not actively extend knee PE: 1. ACL Laxity: Lachman's Test = most sensitive; pivot shift test; anterior drawer test (least reliable); 2. +/- Segund Fx = pathognomonic for ACL tear
Basilar Skull Fracture	History Taking and Performing Physical Exam	a linear fx @ the base of the skull; associated with a dural tear; CSF otorrhea: bruising over mastoid ("Battle Sign"); do a Glasgow Coma Score, CT
Boxer's Fracture	Applying Basic Scientific Concepts	Fx @ neck of 5th metacarpal; MOI: punching with a clenched fist. If @ the base, look for associated carpal injuries; always check for bite wounds--> if present, tx with abx (Augmentin)
Cancer, bone	Formulating Most Likely Diagnosis	Osteosarcoma = MC bone malignancy > Multiple Myeloma > Chondrosarcoma
Cervical Spine Injury	Applying Basic Scientific Concepts	C1- Jefferson (Burst) Fx: vertical compression; atlas C2- Hangman's Fx: Hyperextension then flexion; axis pedicle
Cervical Spondylosis	Formulating Most Likely Diagnosis	chronic degenerative condition; progresses with age; compression of the cervical nerve roots leads to radicular pain and/or motor weakness
Colles Fracture	Formulating Most Likely Diagnosis	A distal radius fx with dorsal angulation; "dinner fork" deformity
Congenital Talipes Equinovarus	Clinical Intervention	Ponseti method of serial manipulation and casting
Contusion, Fingernail	Using Diagnostic and Laboratory Studies	When should you perform an x-ray of a finger with a subungual hematoma? When hematoma is > 50% of nail to evaluate for phalanx fracture
Dermatomyositis	Using Diagnostic and Laboratory Studies	Elevated creatine phosphokinase and Increased ESR; Increased incidence of malignancy (+) Anti-Mi-2 Ab is specific for dermatomyositis
Dermatomyositis	Pharmaceutical Therapeutics	High-dose corticosteroids = 1st line +/- Methotrexate, Azathioprine, IV immunoglobulin
Distal Radius Fracture	Clinical Intervention	sugar tong splint
Dupuytren Contracture	History Taking and Performing Physical Exam	genetic predisposition, ETOH abuse, DM, MOI: contractures of the palmar fascia due to nodules/cords --> fixed flexion deformity @ MCP
Effusion, joint, knee	History Taking and Performing Physical Exam	Bulge sign, ballottement, patellar tap tests
Finger Fracture	Formulating Most Likely Diagnosis	Boxer's Fx: @ neck of 5th metacarpal Bennett Fx: intraarticular fx through the base of the 1st metacarpal (MCP) bone Rolando's Fx: comminuted Bennett's fx

PROBLEM	TASK CATEGORY	ANSWER
Fracture, hand, 4th metacarpal	Clinical Intervention	If Boxer's Fx (fx at neck of 5th +/- 4th metacarpal --> ulnar gutter splint any fracture > 25-30 degrees angulation should be reduced. ORIF if it remains >40 degrees angulated
Galeazzi Fracture	Formulating Most Likely Diagnosis	mid-distal radial shaft fx with dislocation of DRUJ
Gout	Health Maintenance, Patient Education, & Preventative Measures	Attacks secondary to purine-rich foods (alcohol, liver, seafood, yeast); meds can cause it (diuretics-thiazides, loops; ACEI, niacin, pyrazinamide, ASA, & ARBS -except Losartan which actually decreases uric acid levels)
Gouty Arthropathy	Applying Basic Scientific Concepts	Gout is a problem with the metabolism of what type of molecule? Purine In gout, what compound precipitates into the synovial fluid? Sodium urate
Herniated Lumbar Disc	Clinical Intervention	short period of rest; anti-inflammatories, warm moist heat; resume activities as early as the patient can tolerate; exercise (ex. swimming) and PT help promote recovery; muscle relaxants may offer symptomatic relief of acute muscle spasms in early stages; injections; transcutaneous electrical nerve stimulation;
Herniation H&P	History Taking and Performing Physical Exam	may be gradual or sudden; pain radiating into a distal extremity
Joint Dislocation, Ankle	Clinical Intervention	closed reduction + posterior splint +/- ORIF in severe cases
Joint Dislocation, Shoulder	Using Diagnostic and Laboratory Studies	X-ray: axillary & "Y" view. Humeral head inferior/anterior to the glenoid fossa. Must rule out axillary nerve injury (pinprick sensation over the deltoid)
Joint Dislocation, Shoulder (Anterior)	Applying Basic Scientific Concepts	MOI: blow to an abducted, externally rotated arm that's extended; Anterior dislocation = MC type of shoulder dislocation
Joint Injury, Knee (meniscus)	History Taking and Performing Physical Exam	Describe the typical mechanism and history of a pt with a meniscus injury. Hx: rotational force of femur on tibia; now joint line pain with locking & giving way.
Lateral Epicondylitis	Applying Basic Scientific Concepts	The tendinous insertion of what muscle is involved in lateral epicondylitis? Extensor Carpi Radialis Brevis
Legg-Calve-Perthes Disease	Applying Basic Scientific Concepts	idiopathic avascular necrosis of the femoral head
Legg-Calve-Perthes Disease	Formulating Most Likely Diagnosis	MC in children 4-10 YO, boys; low incidence in African Americans Painless limping x weeks (worse with continued use); may have intermittent hip/thigh/groin pain; Loss of abduction & internal rotation
Lumbar Spondylosis with myelopathy	Using Diagnostic and Laboratory Studies	Radiographs, CT scans, and MRIs are used only in the event of complications. Bone density scan (DEXA) is used. Ensure that no osteophytes are in the area used for density assessment for spinal studies.
Marfan Syndrome	Formulating Most Likely Diagnosis	MVP, aortic root dilation --> aortic regurg, aortic dissection, & aortic aneurysms; Tall stature; long/lanky fingers, arms, & legs; pectus carinatum ("pigeon chest"); joint laxity; ectopia lentis (malposition or dislocation of the lens in the eyes); myopia
Medial Collateral Ligament (MCL) Injury	Applying Basic Scientific Concepts	MOI: direct blow to outside of the knee; femoral attachment is to medial epicondyle; tibial attachments are semimembranosus muscle and posteromedial tibia
Meralgia Paresthetica	Clinical Intervention	wt. loss, loose clothing, focal nerve block at inguinal ligament with combo of lidocaine + corticosteroids; surgical decompression
Monteggia Fracture	Formulating Most Likely Diagnosis	Proximal ulnar shaft fx with an anterior radial head dislocation
Myositis	Pharmaceutical Therapeutics	High-dose corticosteroids = 1st line +/- Methotrexate, Azathioprine, IV immunoglobulin
Osteoarthritis	Pharmaceutical Therapeutics	Acetaminophen- preferred initial tx for OA in elderly with bleed risk & mild-mod disease --> NSAIDs more effective Intraarticular corticosteroid injections, sodium hyaluronate, glucosamine, & chondroitin

PROBLEM	TASK CATEGORY	ANSWER
Osteomyelitis	Formulating Most Likely Diagnosis	inflammation/infection of bone; MC <20 YO & > 50 YO RF's: sickle cell disease, DM, immunocompromised, URI in kids Acute: MC in children- hip joint MC affected; refuse to use extremity/bear weight Chronic: MC in adults secondary to open injury/bone surrounding soft tissue (trauma/recent surgery)
Osteomyelitis	Applying Basic Scientific Concepts	inflammation/infxn of bone; MC <20 YO & >50 YO RF's: sickle cell disease, DM, immunocompromised, URI in kids; Acute Osteomyelitis: MC in children (Staph aureus MC); Salmonella = MC/ pathognomonic for sickle cell dz.; Hip=MC joint in children; Chronic Osteomyelitis: MC in adults secondary to open injury/bone surrounding soft tissue (trauma/recent surgery); S. aureus=MC
Osteoporosis	Pharmaceutical Therapeutics	What is the first line pharm tx for osteoporosis? Bisphosphonates ("-dronate"- ex. Alendronate) What are some other 2nd line txs? May also try HRT (estrogen +/- progesterone) and selective estrogen receptor modulators (SERMS)
Osteoporosis	Health Maintenance, Patient Education, & Preventative Measures	Adequate Vit D & exercise (weight lifting, high impact). Periodic height & bone mass measurements.
Peroneal Nerve Injury	History Taking and Performing Physical Exam	loss of sensation to lateral leg with peroneal nerve damage
Pes anserine bursitis	Formulating Most Likely Diagnosis	inflammation of the bursa located between the shinbone (tibia) and the 3 tendons of the hamstring muscles @ the inside of the knee ~2-3 inches below joint; pain usually occurs when arising from seated position, @ night, or with ascending/ descending stairs; local swelling
Plantar Fasciitis	Formulating Most Likely Diagnosis	Describe the most common Hx and PE findings for pts with plantar fasciitis. Gradual onset of heel pain with first few steps in AM and at night
Polymyalgia Rheumatica	Formulating Most Likely Diagnosis	pain/stiffness of the proximal joints in pts > 50 YO; bilateral proximal joint aching/ stiffness (morning stiffness > 30 mins of the pelvic, neck, & shoulder girdle) --> difficulty combing hair, putting on coat, getting out of chair; No severe muscle weakness Closely related to Giant Cell Arteritis
Polymyalgia Rheumatica	Using Diagnostic and Laboratory Studies	Clinical Dx: pain and stiffness in neck and bilateral shoulder & pelvic girdle Labs: markedly elevated ESR (> 50 mm/hr); +/- increased platelets (acute phase reactants)
Polymyalgia Rheumatica	Pharmaceutical Therapeutics	Low-dose corticosteroids (10-20 mg/day); NSAIDs; Methotrexate
Polymyositis	Pharmaceutical Therapeutics	High-dose corticosteroids = 1st line +/- Methotrexate, Azathioprine, IV immunoglobulin
Posterior Tibial Tendon Dysfunction	Formulating Most Likely Diagnosis	player of high-impact sports; pain and swelling to medial foot and ankle; flattened arch; "too many toes sign"
Proximal Humerus Fracture	Clinical Intervention	Sling/Swathe + ortho follow-up in 24-48 hrs Check deltoid sensation (to rule out brachial plexus or axillary nerve injuries)
Reiter's Syndrome	Pharmaceutical Therapeutics	NSAIDs = mainstay of tx. If no response, Methotrexate --> Sulfasalazine, steroids. Anti-TNF agents (Etanercept, Infliximab) Abx during precipitating disease decreases incidence.
Rhabdomyolysis	History Taking and Performing Physical Exam	MC associated with immobility, crush injuries, overexertion, seizures, burns; meds (statins, niacin, fibrates); any hx of dark urine? Any signs of acute kidney injury?
Rhabdomyolysis	Using Diagnostic and Laboratory Studies	Labs: Increased CPK > 20,000, Increased LDH, Increased ALT; Hyperkalemia, Hypocalcemia UA: dark urine that is + for heme but negative for blood (myoglobinuria) EKG: look for signs of hyperkalemia
Rhabdomyolysis	Pharmaceutical Therapeutics	IV saline hydration, Mannitol, Bicarbonate, Calcium gluconate

PROBLEM	TASK CATEGORY	ANSWER
Rheumatoid Arthritis	Applying Basic Scientific Concepts	chronic inflammatory disease with persistent symmetric polyarthritis, bone erosion, cartilage destruction & joint structure loss (due to destruction by pannus). T-cell mediated. Increased Risk: females, smoking.
Rheumatoid Arthritis	Formulating Most Likely Diagnosis	small joint stiffness (MCP, wrist, PIP, knee, MTP, shoulder, ankle) worth with rest. Morning joint stiffness > 60 min after initiating movement, improves later in the day. Symmetric arthritis: swollen, tender, erythematous, "boggy" joint; Boutonniere deformity, swan neck deformity, ulnar deviation @ MCP joint.
Rheumatoid Arthritis	Pharmaceutical Therapeutics	1. Methotrexate = 1st line; 2. NSAIDs = 1st line for pain control (Corticosteroids 2nd line if no relief with NSAIDs)
Rotator Cuff Syndrome	Applying Basic Scientific Concepts	MOI: chronic erosion +/- trauma. SITS (supraspinatus, infraspinatus, teres minor, subscapularis). Common in athletes or laborers performing repetitive overhead movements. Supraspinatus MC.
Scleroderma	Formulating Most Likely Diagnosis	Tight, shiny, thickened skin Limited: "CREST" syndrome- calcinosis cutis, Raynaud's, Esophageal motility disorder, Sclerodactyly, Telangiectasia; (+) Anti-Centromere Ab Diffuse: involves trunk and proximal extremities; (+) Anti-SCL-70 Ab
Sjogren Syndrome	History Taking and Performing Physical Exam	Primary (occurs alone) vs. Secondary (assoc. with other autoimmune disorders- SLE, RA, etc.) xerostomia (dry mouth); keratoconjunctivitis sicca (dry eyes); parotid gland enlargement; thyroid gland dysfunction common
Slipped Capital Femoral Epiphysis (SCFE)	Formulating Most Likely Diagnosis	Describe the MC demographics and presentation of a pt. with SCFE. 13 YO African-American athletic obese male with insidious hip/thigh/knee pain and a limp; external rotation of affected leg
Slipped Capital Femoral Epiphysis (SCFE)	Using Diagnostic and Laboratory Studies	What is the best view to assess SCFE and what is usually seen? Frog Leg Lateral Pelvis or Lateral Hip; posterior and medial displacement of epiphysis
Slipped Capital Femoral Epiphysis (SCFE)	Clinical Intervention	Non-weight bearing with crutches --> ORIF (increased risk of AVN)
Smith Fracture	Formulating Most Likely Diagnosis	A distal radius fx with ventral angulation
Spinal Stenosis	Health Maintenance, Patient Education, & Preventative Measures	seen > 60 YO; worse with extension (prolonged standing/walking); relieved with flexion (sitting/walking uphill); Lumbar flexion will increase canal volume
Sprain of Shoulder/Rotator Cuff	Clinical Intervention	conservative Tx; arthroscopic subacromial decompression if resistant
Synovial Cyst	History Taking and Performing Physical Exam	MC in lumbar region of spine; +/- back/leg pain that's better when sitting/worse when standing/walking; usually associated with age-related degeneration (65+YO)
Systemic Lupus Erythematosus (SLE)	Using Diagnostic and Laboratory Studies	smith and double-sided DNA (dsDNA) antibodies and depressed levels of serum complement are markers for progression
Systemic Lupus Erythematosus (SLE)	Pharmaceutical Therapeutics	skin: sun protection, Hydroxychloroquine (for lesions); Arthritis: NSAIDs or acetaminophen +/- pulse-dose Corticosteroids; cytotoxic drugs (Methotrexate, Cyclophosphamide)
Torticollis	Formulating Most Likely Diagnosis	Can be congenital (local trauma to soft tissues of the neck during delivery) or acquired (blunt trauma to head/neck, sleeping in awkward position, medications, infxns, etc.)
Torticollis	Clinical Intervention	Conservative Therapy
Transient Synovitis	Formulating Most Likely Diagnosis	MC cause of acute hip pain in children aged 3-10 YO. Causes arthralgia and arthritis secondary to a transient inflammation of the synovium of the hip. Unilateral hip or groin pain = MC sx; Non-traumatic. +/- limp; after recent URI, pharyngitis, bronchitis or otitis media.
Traumatic Soft Tissue Injury	Clinical Intervention	RICE and NSAIDS
Vertebra Fracture (Compression)	Formulating Most Likely Diagnosis	fall mechanism or other trauma, esp. in older adults; tenderness with deep palpation of spinous process (pain/point tenderness); x-ray reveals > 20% loss of height in vertebral body
Wound, open, hand	Clinical Intervention	thoroughly irrigate; check for bite wounds --> abx; may leave open depending on the location/risk of inxn; Tetanus shot

PROBLEM	TASK CATEGORY	ANSWER
EENT		
Acoustic Neuroma	Using Diagnostic and Laboratory Studies	MRI, CT scan; Audiology Unilateral sensorineural hearing loss is an acoustic neuroma until proven otherwise.
Acute Narrow Angle-Closure Glaucoma	Applying Basic Scientific Concepts	Increased IOP --> optic nerve damage --> decreased visual acuity. Optho emergency! Decreased drainage of aqueous humor via trabecular meshwork & canal of schlemm in pts with preexisting narrow angle or large lens- elderly, hyperopes, & Asians. Leading cause of preventable blindness in the US. Precipitating factors: mydriasis (pupillary dilation further closes the angle), dim lights, sympathomimetics, & anticholinergics.
Acute Narrow Angle-Closure Glaucoma	Pharmaceutical Therapeutics	Acetazolamide = 1st line! Decreases IOP by decreasing aqueous humor production. Topical Beta agonists (Timolol) reduces IOP without affecting visual acuity. Miotics/cholinergics (Pilocarpine, carbachol) open the angle
Acute Otitis Media	Applying Basic Scientific Concepts	infxn of middle ear, temporal bone, & mastoid air cells. MC preceded by viral URI; peak age is 16-18 months 4 MC organisms: S. pneumo (MC), H. flu, M. cat, Strep pyogenes (GABHS) RF's: ET dysfunction, young (ET is wider, shorter, & more horizontal), day care, pacifier/bottle use, parenteral smoking, not being breastfed
Acute Otitis Media	Formulating Most Likely Diagnosis	fever, otalgia, ear pain, ear tugging in infants, conductive hearing loss, stuffiness If TM perforation --> rapid relief of pain + otorrhea
Acute Otitis Media	Pharmaceutical Therapeutics	Amoxicillin 80-90 mg/kg/day (high-dose) = TOC* x 10-14 days; Cefixime in children 2nd line = Augmentin or Cefaclor PCN allergic --> Erythromycin-Sulfisoxazole, Azithromycin, TMP-SMX (Bactrim)
Acute Sinusitis	Using Diagnostic and Laboratory Studies	1. mainly clinical (sxs should be present > 1 week) 2. CT scan w/o contrast = diagnostic test of choice 3. Sinus radiographs --> order Water's view
Acute Sinusitis	Pharmaceutical Therapeutics	1. Symptomatic therapy: decongestants, antihistamines, mucolytics, intranasal corticosteroids, analgesics, nasal lavage. Indicated if sxs < 7 days or used as adjunctive tx. 2. Abx:(sxs should be present for 10-14 days or earlier if facial swelling, febrile, etc.)- Amoxicillin = DOC x 10-14 days; 2nd line: Doxycycline, TMP-SMX; FQ or Amox/clav used if recent abx use/refractory cases.
Acute Tonsillitis	Clinical Intervention	1. Symptomatic: fluids, warm saline gargles, topical anesthetics, lozenges, NSAIDs. 2. Abx if S. pyogenes: PCN, amoxicillin. PCN allergy: erythromycin or clindamycin
Age-related Macular Degeneration	Health Maintenance, Patient Education, & Preventative Measures	RF's: age > 50 YO, caucasians, females, smokers. Amsler grid at home to monitor stability. Zing, Vitamin A, C, & E may slow progression.
Allergic Rhinitis	History Taking and Performing Physical Exam	associated with nasal polyps & usually worse in mornings; sneezing, nasal congestion/itching, clear rhinorrhea; pale/violaceous, boggy turbinates, nasal polyps with cobblestoning of mucosa of the conjunctiva
Amaurosis Fugax	Formulating Most Likely Diagnosis	temporary monocular (unilateral) vision loss (lasting minutes) with complete recovery; due to retinal emboli or ischemia. Temporary "curtain" that resolves ("lifts up") usually within 1 hr.
Amblyopia	History Taking and Performing Physical Exam	hx of "lazy eye"/reduced vision in one eye caused by abnormal visual development early in life. The weaker eye often wanders inward or outward. Generally develops from birth up to age 7 years. Rarely affects both eyes. Ask if any hx of corrective lenses, contacts, or patching therapy; strabismus; ask about hx of premature birth, small size at birth, family hx of lazy eye, or any developmental disabilities.
Angular Cheilitis	Formulating Most Likely Diagnosis	Fissures at the side of the mouth.
Bacterial Conjunctivitis	Formulating Most Likely Diagnosis	Purulent discharge, lid crusting; usually no visual changes (mild pain); absence of ciliary injection
Bitemporal Hemianopsia	Formulating Most Likely Diagnosis	Lesion of the optic chiasm

PROBLEM	TASK CATEGORY	ANSWER
Blepharitis	History Taking and Performing Physical Exam	Common in pts with Down syndrome & eczema. Inflammation of both eyelids. 1. Anterior: involves skin & base of the eyelashes 2. Posterior: Meibomian gland dysfunction (associated with rosacea & allergic dermatitis)
Central Retinal Artery Occlusion	Formulating Most Likely Diagnosis	acute, sudden monocular vision loss, often preceded by Amaurosis Fugax. Pale retina with cherry-red macula (red spot); "box car" appearance of retinal vessels; MC in 50-80YO with atherosclerotic disease
Cerumen Impaction	Clinical Intervention	1. Flush ear if no evidence of TM perforation. 2. Serum softening: hydrogen peroxide 3%, carbamide peroxide (Debrox), curette removal of cerumen, suction
Chemical Burns	Clinical Intervention	Ophtho Emergency! Every minute counts. 1.Irrigation must be started ASAP (greatest impact on prognosis). LR or Normal saline x 30 min or at least 2 L of fluids. 2. Check pH & visual acuity after irrigation. Irrigate until eye pH is 7.0-7.3; 3. Abx: Moxifloxacin, 0.25% Atropine drops. Ophtho follow-up.
Cholesteatoma	Applying Basic Scientific Concepts	abnormal keratinized collection of desquamated squamous epithelium --> mastoid bony erosion. MC due to ET dysfunction --> conductive hearing loss.
Joint Dislocation, Shoulder	Using Diagnostic and Laboratory Studies	X-ray: axillary & "Y" view. Humeral head inferior/anterior to the glenoid fossa. Must rule out axillary nerve injury (pinprick sensation over the deltoid)
Cholesteatoma	Formulating Most Likely Diagnosis	Painless otorrhea (brown/yellow discharge with strong odor) +/- develop vertigo/ dizziness granulation tissue (cellular debris) +/- perforated TM on otoscope peripheral vertigo, conductive hearing loss
Color Blindness	History Taking and Performing Physical Exam	usually inherited-ask about any fm hx; ask about difficulty distinguishing between shades of red and green. Less commonly people cannot distinguish between shades of blue and yellow. Children may have difficulty interpreting color-coded learning materials. Ask about any hx of diseases (ex. sickle cell, DM, macular degeneration, Alzheimer's, MS, etc.); Medication hx; chemical exposure Ishihara test is a color perception test for red-green color deficiencies;
Conductive Hearing Loss	Formulating Most Likely Diagnosis	Weber: lateralizes to affected ear; Rinne: BC > AC (negative rinne) Etiologies: obstruction from foreign body or cerumen impaction (MCC); damage to ossicles (otosclerosis, cholesteatoma), mastoiditis, otitis media
Conjunctival Chemosis	Formulating Most Likely Diagnosis	usually from irritation, allergies. Watery eyes, excessive tearing, itchiness, blurry or double vision, swelling/inflammation.
Corneal Abrasion	Formulating Most Likely Diagnosis	foreign body sensation, tearing, red & painful eye. On fluorescein staining: "ice rink"/ linear abrasions seen especially if the foreign body is underneath the eyelid
Dacryocystitis	Formulating Most Likely Diagnosis	infection of the lacrimal sac; tearing, tenderness, edema & redness to medial canthal (nasal side) of lower lid (+/- purulent)
Dental Caries, child	History Taking and Performing Physical Exam	Ask about hx of flossing, how often pt is brushing, fluorinated water, use of mouthwash, regular scheduled dentist visits. Ask about eating sugary/sweet foods/ drinks. Observe the mouth for visualization of teeth erosion, gum swelling, plaque, etc.
Diabetic Retinopathy	Applying Basic Scientific Concepts	MCC of new permanent vision loss/blindness in 25-74 YO. 1. Nonproliferative: microaneurysms --> blot & dot hemorrhages, flame-shaped hemorrhages, cotton wool spots, hard exudates, retinal vein beading (tortuous/ dilated veins), closure of retinal capillaries; Not associated with vision loss 2. Proliferative: Neovascularization 3. Maculopathy: macular edema or exudates, blurred vision, central vision loss. Can occur at any stage.
Diabetic Retinopathy	History Taking and Performing Physical Exam	DM hx, fundoscopic exam, check blood sugar/Hgba1C, etc.; ask about med compliance; maculopathy-central vision loss
Diphtheria	Formulating Most Likely Diagnosis	Tonsillopharyngitis or Laryngitis = classic presentation. Pseudomembranes: friable gray/white membrane on pharynx that bleeds if scraped. Bull neck; Myocarditis, arrhythmias, or heart failure.

PROBLEM	TASK CATEGORY	ANSWER
Diphtheria	Using Diagnostic and Laboratory Studies	Clinical dx; PCR, culture to confirm. Isolate until 3 (-) pharyngeal cultures.
Diphtheria	Pharmaceutical Therapeutics	Diphtheria antitoxin (horse serum) most important + Erythromycin or Penicillin x 2 weeks. Clindamycin or Rifampin are alternatives PCN + Aminoglycoside for endocarditis
Diphtheria	Health Maintenance, Patient Education, & Preventative Measures	Prophylaxis: Erythromycin x 7-10 days or Penicillin benzathine G x 1 dose Prevention: DTaP- 5 doses: 2,4,6,15-18 mo, 4-6 yo, booster at 11-12 yo
Diphtheritic Pharyngitis	Applying Basic Scientific Concepts	Corynebacterium diphtheriae (gram + rod) rare in US due to vaccination (dTAP)- given @ 2, 4, 6, 15-18 months, b/w 4-6 years, & booster at 11-12 YO. Transmission: inhalation of respiratory secretions; exotoxin induces inflammatory response.
Drug Toxicity, Acetaminophen	Using Diagnostic and Laboratory Studies	elevated LFT's; check APAP level @ 4 hrs to determine tx.
Epistaxis	Clinical Intervention	Lean forward with direct pressure to nose x 10-15 min Topical decongestants/vasoconstrictors may be used with direct pressure. Phenylephrine, Oxymetazoline (Afrin), Lidocaine, cocaine. Silver Nitrate (Cauterization)- must be able to see bleeding site Packing- consider abx w/ it (ex. Cephalexin or Clindamycin) Adjunct therapy: avoid exercise for a few days, avoid spicy foods. Bacitracin & humidifiers to help moisten nasal mucosa. Septal hematoma assoc. with loss of cartilage if hematoma not removed.
Epistaxis (Anterior)	Formulating Most Likely Diagnosis	Anterior MC: nasal trauma ("digital trauma"), forceful blowing, etc.; low humidity in hot environments, rhinitis, ETOH, antiplatelet therapy/meds Kiesselbach's plexus MC site of bleeding in anterior epistaxis.
Epistaxis (Posterior)	Formulating Most Likely Diagnosis	Posterior: HTN, atherosclerosis are MC RF's Palatine artery MC site for posterior (may cause bleeding in both nares and posterior pharynx)
Esotropia	History Taking and Performing Physical Exam	strabismus = misalignment of the eyes; convergent strabismus- deviated inward ("cross-eyed") = esotropia. Diplopia, scotomas, or ambylopia
Fracture, Orbital (Maxillary)	Formulating Most Likely Diagnosis	Fxs to orbital floor as a result of trauma. Decreased visual acuity, diplopia esp. with upward gaze if there's inferior rectus muscle entrapment, orbital emphysema; eyelid swelling after blowing nose
Hypertensive Retinopathy	History Taking and Performing Physical Exam	Longstanding hx of HTN. Fundoscopic exam. Cup-to-disc ratio 0.3, <50%. Graded Criteria I-IV. I. Arterial Narrowing: abnormal light reflexes on dilated tortuous arterioles shows up as colors; copper wiring= moderate, silver wiring = severe II. AV Nicking: venous compression at the arterial-venous junction by increased arterial pressure. III. Flame shaped hemorrhages, cotton wool spots IV. Papilledema --> Malignant HTN
Keratitis, corneal ulcer	Formulating Most Likely Diagnosis	pain, photophobia, reduced vision, tearing, conjunctival erythema conjunctival injection/erythema, ciliary injection (limbic flush), corneal ulceration/ defect on slit lamp exam, purulent or watery discharge. Bacterial Keratitis: hazy cornea, ulcer, stromal abscess +/- hypopyon HSV Keratitis: dendritic lesions- branching seen with fluorescein staining
Larynx Cancer	History Taking and Performing Physical Exam	hoarseness, dyspnea, dysphonia, aspiration, dysphagia, hemoptysis, pain inspect head, neck, & larynx
Larynx Cancer	Clinical Intervention	surgical resection +/- chemo/radiation
Leukoplakia	Using Diagnostic and Laboratory Studies	clinical: painless white patchy lesion that cannot be scraped off

PROBLEM	TASK CATEGORY	ANSWER
Macular Degeneration	History Taking and Performing Physical Exam	Central vision loss in elderly (as well as detail and color vision), bilateral; use an Amsler grid @ home to monitor stability
Macular Degeneration	Applying Basic Scientific Concepts	RF's: age > 50 YO, whites, females, smokers MCC of permanent legal blindness & visual loss in the elderly (> 75 YO); The macula is responsible for central vision as well as detail and color vision. 2 tyes: 1. Dry (atrophic): drusen spots; 2. Wet (Neovascular or exudative): new abnormal vessels
Malignant Neoplasm of the Mouth	History Taking and Performing Physical Exam	usually associated with oral tobacco
Nasal Polyps	Pharmaceutical Therapeutics	Intranasal corticosteroids = TOC Surgical removal may be needed in some cases only if medical therapy unsuccessful
Neonatal Hearing Loss	History Taking and Performing Physical Exam	if not identified prior to 6 months old, get delays in speech and language. Screening Newborns: auditory brain stem response (ABR)- tests CN8; Automated ABR (AABR); otoacoustic emissions (OAE's)
Optic Neuritis	Formulating Most Likely Diagnosis	Loss of color vision, visual field defects (ex. central scotoma/blind spot), loss of vision over a few days (usually unilateral); associated with ocular pain that is worse with eye movement. Marcus-Gunn pupil: relative afferent pupillary defect
Optic Neuritis	Using Diagnostic and Laboratory Studies	usually a clinical dx; Swinging light test, fundoscopy; may need MRI
Oral Candidiasis (Thrush)	History Taking and Performing Physical Exam	scrapes off; pseudohyphae or yeast buds under microscope with KOH prep; Immunosuppressed, DM, inhaled steroid use without a spacer or rinsing mouth afterwards, dentures, etc.
Oral Candidiasis (Thrush)	Pharmaceutical Therapeutics	1. Nystatin Liquid = TOC. 2. Clotrimazole troches, oral Fluconazole
Oral Hairy Leukoplakia	Applying Basic Scientific Concepts	caused by Epstein-Barr virus (HHV4); MC in immunocompromised (HIV, post-transplant, chronic steroid use, chemo) Not considered cancerous
Oral Hairy Leukoplakia	Formulating Most Likely Diagnosis	painless, white plaque on lateral tongue borders or buccal mucosa +/- smooth or irregular "hairy" or "feathery" with prominent folds; cannot be scraped off
Oral Hairy Leukoplakia	Clinical Intervention	No specific tx (may spontaneously resolve). Antiretroviral tx, ablation.
Oral Leukoplakia	Applying Basic Scientific Concepts	considered pre-cancerous; It's hyperkeratosis due to chronic irritation (ex. tobacco, cig smoking, dentures, ETOH) painless white patch that cannot be scraped off
Oral Lichen Planus	Formulating Most Likely Diagnosis	increased incidence in pts with HCV infection; Lacy leukoplakia of oral mucosa aka Wickham striae
Oral Lichen Planus	Pharmaceutical Therapeutics	local or systemic corticosteroids
Orbital Cellulitis	Formulating Most Likely Diagnosis	usually secondary to sinus infxn (ethmoid MC); MC in children 7-12 YO Decreased vision, pain w/ ocular movement, proptosis, eyelid erythema & edema around orbit.
Orbital Cellulitis	Using Diagnostic and Laboratory Studies	High resolution CT scan of orbits with IV contrast
Otitis Externa	Health Maintenance, Patient Education, & Preventative Measures	Protect ear against moisture (drying agents include isopropyl alcohol & acetic acid drops).
Otitis Externa	Pharmaceutical Therapeutics	Drying agents include isopropyl alcohol & acetic acid. Topical abx: 1. Ciprofloxacin/dexamethasone (Ofloxacin safe if an assoc. TM perf). 2. Aminoglycoside combination: Neomycin/Polytrim-B/Hydrocortisone otic (not used if TM perf suspected). Amphotericin B if fungal.
Parotitis	Health Maintenance, Patient Education, & Preventative Measures	Acute viral parotitis (Mumps) can be prevented with MMR vaccine given in two doses @ age 12-15 months and 2nd dose @ age 4-6 YO

PROBLEM	TASK CATEGORY	ANSWER
Periorbital Cellulitis	Formulating Most Likely Diagnosis	infection of the eyelid and periocular tissue. May have ocular pain & swelling but no visual changes and no pain with ocular movement.
Peritonsilar Abscess	Formulating Most Likely Diagnosis	dysphagia, pharyngitis, muffled "hot potato voice", difficulty handling oral secretions, trismus, uvula deviation to contralateral side, anterior cervical lymphadenopathy
Peritonsilar Abscess	Using Diagnostic and Laboratory Studies	CT scan = 1st line to differentiate cellulitis vs. abscess
Peritonsilar Abscess	Clinical Intervention	1. Abx + aspiration or I&D; 2. Tonsillectomy indications: recurrent strep infxns, recurrent peritonsillar infxns, chronic tonsillitis
Peritonsilar Abscess (Quinsy)	Applying Basic Scientific Concepts	Tonsilitis --> Cellulitis --> Abscess formation MCC by strep pyogenes (GABHS), staph aureus, polymicrobial (including anaerobes)
Pterygium	Clinical Intervention	observation for most, +/- artificial tears. Removal only if growth affects vision.
Retinal Detachment	Applying Basic Scientific Concepts	3 main types: 1. Rhegmatogenous = MC type. Retinal tear --> retinal inner sensory layer detaches from choroid plexus. MC predisposing factor = myopia & cataracts. 2. Traction: adhesions separate the retina from its base (proliferative DM retinopathy, sickle cell, trauma) 3. Exudative (serous): fluid accumulates beneath the retina--> detachment (ex. HTN, CRVO, papilledema)
Retinal Detachment	Formulating Most Likely Diagnosis	photopsia (flashing lights) with detachment --> floaters --> progressive unilateral vision loss: shadow "curtain coming down" in periphery initially --> loss of central visual field; No pain/redness.
Retinal Detachment	Using Diagnostic and Laboratory Studies	Fundoscopy: retinal tear/detached tissue "flapping" in the vitreous humor; (+) Shafer's sign
Retinitis	Applying Basic Scientific Concepts	threatens vision by damaging the retina. Types: retinitis pigmentosa (genetic), CMV retinitis (a herpes virus) more common if immunocompromised; floaters, blurred vision, loss of central vision possible at first and eventually loss of peripheral vision; can affect color vision as well
Retinoblastoma	History Taking and Performing Physical Exam	absent red reflex (fundus reflection) + "white pupil". Retinoblastoma is part of the DDx for cataracts. Check visual acuity, fundoscopy. Ask about family hx/any childhood malignancy in family (genetic component)
Sensorineural Hearing Loss	Clinical Intervention	If due to presbycusis (MCC): amplification devices; cochlear implants If unilateral sensorineural hearing loss (acoustic neuroma): MRI or CT scan
Sialadenitis	Applying Basic Scientific Concepts	Bacterial infxn of the parotid or submandibular salivary glands. May be due to dehydration or chronic illness; Staph aureus = MC organism
Sialadenitis	History Taking and Performing Physical Exam	Acute pain, swelling, & erythema near the gland especially with meals; tenderness @ the duct opening (+/- pus if duct massaged). Local pain, dysphagia, trismus. May develop fever/chills if severe
Sialolithiasis	Formulating Most Likely Diagnosis	MC in Wharton's duct (submandibular gland duct); Stenson's duct (parotid gland duct) Postprandial salivary gland pain & swelling
Sialolithiasis	Clinical Intervention	Sialogogues: lemon drops or tart hard candies; Xylitol gum; hydration; gland massage Abx: Dicloxacillin or Nafcillin + Metronidazole or Clindamycin if severe Avoid Anticholinergics Extracorporeal lithotripsy, intraoral stone removal if no response to conservative tx
Soft Tissue Traumatic Injury	Clinical Intervention	If contusion of the pinna or nasal fracture with septal hematoma, the blood requires drainage.
Strabismus	History Taking and Performing Physical Exam	misalignment of the eyes (stable ocular alignment not present until age 2-3 months). Esotropia: convergent strabismus; Exotropia: divergent strabismus. Diplopia, scotomas, or amblyopia

PROBLEM	TASK CATEGORY	ANSWER
Streptococcal Pharyngitis	Using Diagnostic and Laboratory Studies	1. Rapid antigen detection test 2. Throat culture = definitive dx (gold standard)
Streptococcal Pharyngitis	Pharmaceutical Therapeutics	1. Penicillin G or VK = 1st line; Amoxicillin, Amox-clavulonate 2. Macrolides if PCN allergic Other alternative: Clindamycin, Cephalosporins
Subconjunctival Hemorrhage	Clinical Intervention	check visual acuity, EOM, pen light, slit-lamp exam, IOP, eyelid inspection with eversion, BP; if hx of trauma, rule out ruptured globe or retrobulbar hemorrhage. Give artificial tears.
Superficial Keratitis	Clinical Intervention	many different kinds. Stain the eye looking for herpes (dendritic lesions)
Teeth Erosion	Health Maintenance, Patient Education, & Preventative Measures	hygiene, flossing, mouthwash, fluoride, decrease sugary foods/drinks, dentist
Torus Palatines	Clinical Intervention	Refer to maxofacial surgeon for surgery if problematic
Tympanic Membrane Perforation	History Taking and Performing Physical Exam	Hx of penetrating or noise trauma, otitis media Acute ear pain, hearing loss +/- bloody otorrhea, tinnitus, vertigo
Tympanic Membrane Perforation	Health Maintenance, Patient Education, & Preventative Measures	Avoid loud music/noise trauma; wear ear plugs; May lead to cholesteatoma development. Most perforated TMs heal spontaneously. Follow-up to ensure resolution +/- surgical repair.
Uveitis	History Taking and Performing Physical Exam	Hx of systemic inflammatory diseases (suspect if recurrent)- may be associated with HLA B27 spondyloarthropies, sarcoid, etc.; Infectious CMV, toxoplasmosis, TB; Trauma usually causes anterior uveitis. PE: 1. ciliary injection (limbic flush), consensual photophobia, +/- vision changes; 2. Inflammatory cells and flare within the aqueous humor
Uveitis	Pharmaceutical Therapeutics	1. Anterior: Topical corticosteroids vs. 2. Posterior: Systemic corticosteroids
Uveitis (iritis)	Formulating Most Likely Diagnosis	Anterior: inflammation of iris (iritis) or ciliary body (cyclitis). Unilateral ocular pain/redness/photophobia; excessive tearing (no discharge). Usually occurs after blunt trauma Posterior: choroid inflammation; blurred/decreased vision, floaters, absent sxs of anterior involvement; no pain
Vasomotor Rhinitis	Pharmaceutical Therapeutics	Oral antihistamines, decongestants, intranasal steroids, mast cell stabilizers, anticholinergics
Viral Conjunctivitis	Applying Basic Scientific Concepts	MC caused by Adenovirus; MC in children; MC from a swimming pool; very contagious
Viral Conjunctivitis	Formulating Most Likely Diagnosis	child who swims often with foreign body sensation, erythema & itching; normal vision; preauricular lymphadenopathy, copious watery discharge, scanty mucoid discharge. Often bilateral
Vitreous Hemorrhage	History Taking and Performing Physical Exam	Blurred vision; Floaters: faint cobweb-like apparitions floating through the field of vision. Reddish tint to vision. Photopsia- brief flashes of light in the peripheral vision.

PROBLEM	TASK CATEGORY	ANSWER
REPRODUCTIVE		
Amenorrhea	Formulating Most Likely Diagnosis	1ry: failure of menarche onset by age 15 (in the presence of secondary sex characteristics) or age 13 (in the absence of secondary sex characteristics) 2ry: absence of menses for > 3 months in a pt with previously normal menstruation (or > 6 months in a pt who was previously oligomenorrhea); MCC of 2ry amenorrhea = pregnancy
Anovulation	History Taking and Performing Physical Exam	Anovulation may manifest in a variety of clinical presentations, from luteal insufficiency to oligomenorrhea. Obtain a past medical and surgical hx. Hx about previous infections, hx of pelvic surgery, previous dx of chromosomal abnormalities, past hx of dilatation and curettage, any hx of amenorrhea or Asherman syndrome. Past family hx (mother and/or sisters have similar sxs?). Hx of pubertal development (onset of menarche, pubarche, and growth spurt); Detailed hx of the menses (frequency, regular or irregularity, length, quantity of uterine bleeding); past reproductive hx; past and current sexual hx; dietary hx; med hx; psych hx; hx of previous malignancies PE: evaluate Tanner Stages; examine age-appropriateness of genitalia; look for lanugo (anorexia) vs hirsutism/male pattern baldness (Ex. PCOS), etc.
Azoospermia	Applying Basic Scientific Concepts	20% of male infertility situations. Can be pre-testicular (high FSH levels), testicular (genetic), or post-testicular (obstructive problem).
Bacterial Vaginosis	Applying Basic Scientific Concepts	overgrowth of Gardnerella Vaginalis; MCC of vaginitis. Decreased lactobacilli acidophilus (normally maintains vaginal pH)
Bacterial Vaginosis	Formulating Most Likely Diagnosis	vaginal odor worse after sex; +/- pruritus; > 50% may be asx.
Bacterial Vaginosis	Using Diagnostic and Laboratory Studies	Amsel's Criteria: 1. clue cells on microscopic saline smear; 2. pH >4.5; 3. thin, homogenous watery grey-white discharge; 4. (+) whiff test- fishy odor with 10% KOH prep
Bacterial Vaginosis	Pharmaceutical Therapeutics	Metronidazole (Flagyl) x 7 days - safe if prego, may use gel or PO; Clindamycin
Bacterial Vaginosis	Health Maintenance, Patient Education, & Preventative Measures	Avoid douching; Condom use helps; No need to tx partner
Breast Cancer	History Taking and Performing Physical Exam	Hx/RF's: 1st degree relative with breast cancer, age > 65YO, increased number of menstrual cycles (nulliparity), late age of first full term pregnancy >35 YO, early onset of menarche <12 YO, late menopause, never breastfeeding, increased estrogen exposure (postmenopausal HRT's and OCP's, obesity, ETOH); BRCA1/BRCA2 PE: usually painless, hard, fixed (non-mobile) lump; MC in the upper outer quadrant of the breast. Unilateral nipple discharge, skin changes (asymmetric redness, discoloration, dimpling, changes in breast size; nipple inversion; skin thickening; peau d'orange --> poor prognosis
Breast Cancer	Using Diagnostic and Laboratory Studies	1. Mammogram: microcalcifications & spiculated masses are highly suspicious for malignancy; mammogram is best screening test. 2. Ultrasound: recommended initial modality to evaluate breast masses in women < 40YO 3. Biopsy: FNA w/ biopsy
Breast Cancer	Health Maintenance, Patient Education, & Preventative Measures	1. Mammogram: annually for > 40 YO or 10 yrs prior to the age that your 1st degree relative was diagnosed. 2. Clinical Breast Exam: age 20-39 @ least every 3 yrs; > 40 YO annually 3. Breast Self-Exam: monthly > 20 YO- do immediately after menstruation or on days 5-7 of menstrual cycle; do in shower leaning forward
Breast Cancer	Pharmaceutical Therapeutics	Anti-estrogen (ex. Tamoxifen) is useful in tumors that are ER positive. Aromatase inhibitors (ex. Letrozole, Anastrozole) are useful in postmenopausal women with ER + breast cancer. Monoclonal Ab tx [Trastuzamab (Herceptin)] is useful in pts with HER2 positivity.
Breast Cancer Prevention	Pharmaceutical Therapeutics	SERM (ex. Tamoxifen or Raloxifene) can be used in postmenopausal women or women > 35 YO with high risk for breast cancer. Tx is used for 5 years.

PROBLEM	TASK CATEGORY	ANSWER
Cancer, Vulva	Formulating Most Likely Diagnosis	peak incidence 50 YO. Linked to DES exposure. Pruritus MC presentation, vaginal itching, irritation. Asymptomatic in ~20%. Post-coital bleeding, vaginal discharge. May have visible red/white ulcerative, crusted lesions.
Cancer, Vulva	Using Diagnostic and Laboratory	Biopsy- 90% squamous
Cervical Cancer	Using Diagnostic and Laboratory Studies	Screening: pap smear with cytology Dxcolposcopy with biopsy
Cervical Cancer	Clinical Intervention	Stage 0 (Carcinoma in situ)- Local Tx: 1. Excision (LEEP, cold knife coniation) --> preferred, 2. Ablation (cryotherapy or laser), 3. TAH-BSO Stage Ia1 (microinvasion): Surgery- conization (excision), TAH-BSO, XRT Other Stage I, Iia: TAH-BSO; XRT + Chemo tx (Cisplatin) Stage IIb-IVa (Locally Advanced): XRT + Chemo (Cisplatin +/- 5FU) Stage IVb or recurrent (Distant METS): palliative radiation, chemotherapy (surgery not likely curative)
Cervical Cancer	Applying Basic Scientific Concepts	HPV associated with 99.7% (esp 16,18, 31 & 33, 45, 52, 58); 3rd MC gynecologic cancer (#1-endometrial, #2-ovarian); 3rd MC gynecologic cancer (31-endometrial, #2-ovarian) MC METS locally (vagina, parametrium, pelvic LN's) MC type = squamous; Clear Cell Carcinoma linked with DES exposure MC sx = post-coital bleeding/spotting
Cervical Cancer	Health Maintenance, Patient Education, & Preventative Measures	RF's: HPV, early onset of sexual activity, increased number of partners, smoking, CIN, DES exposure, immunosuppression, STI's Prevention: HPV vaccine (Gardasil 9); screen for cervical cancer via pap smear w/ cytology
Chronic/Pre-existing HTN	Formulating Most Likely Diagnosis	HTN before 20 weeks gestation or before pregnancy; persists > 6 weeks postpartum.
Contraception	Pharmaceutical Therapeutics	Combination OCP's (Estrogen + Progesterone): prevents ovulation by inhibiting mid-cycle LH surge, thicken cervical mucosa, thins endometrium. Drospirenone (combo OCP) approved for PMDD/helps with bloating. Progestin only OCP's: safe during lactation; No estrogen SE's. IUD: most effective form besides abstinence; Increased PID risk.
Cystocele	Formulating Most Likely Diagnosis	posterior bladder herniating into the anterior vagina
Dysfunctional Uterine Bleeding (DUB)	Clinical Intervention	Dx of Exclusion. If work-up shows no evidence of organic cause and negative pelvic exam, DUB is the dx. Workup includes: hormone levels, transvaginal ultrasound. Endometrial biopsy if stripe > 4mm on transvaginal US or in women >35 YO (to rule out endometrial hyperplasia or carcinoma)
Dysfunctional Uterine Bleeding (DUB)	Pharmaceutical Therapeutics	Hormone tx, IUD, tx underlying cause.
Eclampsia	Formulating Most Likely Diagnosis	preeclampsia + seizures or coma; abrupt tonic-clonic seizures 1-2 min --> postictal. Hyperreflexia.
Eclampsia	Clinical Intervention	ABCD's 1st. Magnesium sulfate for seizures, Lorazepam 2nd line if refractory. Delivery of fetus once pt stabilized. BP meds: hydralazine
Endometrial Cancer	Applying Basic Scientific Concepts	RF's: Fm hx, increased # of ovulatory cycles, infertility, nulliparity, age > 50 YO, BRCA1/BRCA2, Peutz-Jehgers, Turner's Syndrome; HTN, DM, Tamoxifen; Increased estrogen exposure Estrogen-dependent cancer; MC gynecologic malignancy in the US; MC type = adenocarcinoma; MC postmenopausal (50-60 YO peak) Combination OCP's are protective against both ovarian & endometrial cancers
Endometrial Cancer	Formulating Most Likely Diagnosis	Postmenopausal bleeding; Endometrial stripe > 4 mm on transvaginal US
Endometrial Cancer	Using Diagnostic and Laboratory Studies	Dx: biopsy, pelvic exam, D&C, transvaginal US, CT, MRI Labs: CA-125 (seen in both endometrial & ovarian cancer)

PROBLEM	TASK CATEGORY	ANSWER
Endometrial Cancer	Health Maintenance, Patient Education, & Preventative Measures	MC gynecologic malignancy in the US. 4th MC malignancy in women overall (after breast --> lung --> colorectal). MC postmenopausal (50-60 YO peak). Estrogen-dependent cancer. RF's: increased estrogen exposure- nulliparity, chronic anovulation, PCOS, obesity, estrogen replacement therapy, late menopause, Tamoxifen; HTN , DM. Combination OCP's are protective against both ovarian and endometrial cancers. Encourage regular visits with OBGYN. Educate women that MC sx is postmenopausal bleeding.
Endometriosis	Applying Basic Scientific Concepts	Presence of endometrial tissue outside of the endometrial (uterine) cavity. The ectopic endometrial tissue responds to cyclical hormonal changes. Ovaries = MC site. RF's: nulliparity, family hx, early menarche. Onset usually <35 YO.
Endometriosis	Formulating Most Likely Diagnosis	1. Classic triad: cyclic premenstrual pelvic pain +/- low back pain, dysmenorrhea (painful menses), & dyspareunia (painful intercourse); dyschezia 2. +/- pre-post menopausal bleeding; 3. Infertility
Endometriosis	Using Diagnostic and Laboratory Studies	1. PE: usually normal +/- fixed, tender adnexal masses 2. Laparoscopy with biopsy = definitive
Endometriosis	Clinical Intervention	1. Medical (Conservative): combined OCP's + NSAID's (for pain); Progesterone, Leuprolide, Danazol 2. Surgical: laparoscopy w/ ablation if fertility desired; TAH-BSO if no desire to conceive.
Endometritis	Applying Basic Scientific Concepts	Infection of the uterine endometrium; biggest risk factor = C-section, other RF's include: PROM >24 hrs, vaginal delivery, D&C for evacuation.
Endometritis	Formulating Most Likely Diagnosis	Fever, tachycardia, abdominal pain & uterine tenderness after C-section, 2-3 days postpartum or post-abortion. May have vaginal bleeding/foul smelling lochia.
Endometritis	Pharmaceutical Therapeutics	1. Infxn post C-section: Clindamycin + Gentamicin. May add ampicillin for additional Group B strep coverage. Ampicillin/sulbactam is an alternative. 2. Infxn after vaginal delivery or chorioamnionitis: Ampicillin + Gentamicin
Enterocele	Formulating Most Likely Diagnosis	Pouch of Douglas (small bowel) herniated into the upper vagina
Fibroadenoma of the Breast	Formulating Most Likely Diagnosis	composed of glandular & fibrous tissue (collagen arranged in "swirls"); smooth, well-circumscribed, non-tender, freely mobile, rubbery lump in the breast. Gradually grows over time. Does not wax/wane with menstruation.
Fibrocystic Breast Changes	Health Maintenance, Patient Education, & Preventative Measures	Most spontaneously resolve (increases/decreases with menstrual hormonal changes). +/- FNA removal of fluid if symptomatic.
Fibrocystic Breast Disorder	Clinical Intervention	Ultrasound. FNA reveals straw-colored fluid (no blood); Most spontaneously resolve +/- FNA removal of fluid if symptomatic.
Fragile X Syndrome	Using Diagnostic and Laboratory Studies	x-ray spine (scoliosis); ECHO to exclude MVP; Molecular testing (DNA tests- FMR1 gene; Southern Blot & PCR) & karyotyping; do ophtho exam and audiology exam.
Gestational Diabetes	Using Diagnostic and Laboratory Studies	1. Screening: done at 24-28 weeks gestation --> 50 g oral glucose challenge test (nonfasting) 2. Confirmatory 3-Hr 100 g oral GTT = gold standard. Performed in the morning after an overnight fast.
Gestational Diabetes	Clinical Intervention	Daily fingersticks overnight & after each meal. Diet/Exercise recommended. Labor induction @ 38 weeks if uncontrolled/macrosomia. @ 40 weeks if controlled/no macrosomia. C-section.
Gestational Diabetes	Pharmaceutical Therapeutics	1. Insulin = tx of choice. 2. Glyburide safe in pregnancy. Also metformin.
Gestational Hypertension	Pharmaceutical Therapeutics	Methyldopa = 1st line for chronic/pre-existing HTN. Labetalol, Hydralazine, Nifedipine

PROBLEM	TASK CATEGORY	ANSWER
Gestational Trophoblastic Disease (Molar Pregnancy)	Applying Basic Scientific Concepts	2 MC RF's: prior molar pregnancy, extremes of maternal age <20 YO or >35 YO. Complete: egg with no DNA fertilized by 1 or 2 sperm. 46XX all paternal chromosomes. Associated with higher risk of malignant development into choriocarcinoma. Incomplete (partial): egg is fertilized by 2 sperm (or 1 sperm that duplicates its chromosomes). There may be development of the fetus, but its always malformed and never viable.
Gestational Trophoblastic Disease (Molar Pregnancy)	History Taking and Performing Physical Exam	Painless vaginal bleeding +/- brownish discharge; uterine size/date discrepancies (larger than expected). Preeclampsia before 20 weeks. Hyperemesis gravidarum earlier than usual. Choriocarcinoma: METS to lung MC.
Gestational Trophoblastic Disease (Molar Pregnancy)	Using Diagnostic and Laboratory Studies	1. Beta HCG markedly elevated (ex. > 100,000). Very low serum alpha-fetoprotein. 2. US: "snowstorm" or "cluster of grapes" appearance; absence of fetal parts/heart sounds in complete; no products of conception in complete; gestational sac may be present in partial.
Gynecomastia	History Taking and Performing Physical Exam	Breast development in boys/men; sometimes physiologic but consider medication-induced (anti-androgen meds, anabolic steroids, AIDs meds).
Gynecomastia	Clinical Intervention	1. Supportive: depends on cause: ex. stop offending meds; observation if early in disease course (most regress spontaneously). Ideal tx should start within 6 months of onset. Surgery if resistant. Limit ETOH.
Gynecomastia	Pharmaceutical Therapeutics	Clomiphene, Tamoxifen, Danazol
Herpes, genital	Health Maintenance, Patient Education, & Preventative Measures	HSV-1 (oral) vs. HSV-2 (genital) - both can interchange. Educate patient about safe sex, condom use, etc.
Hyperemesis Gravidarum	Pharmaceutical Therapeutics	PO or IV fluids; multivitamins; Bland diet: BRAT Diet (Bananas, Rice, Apple-sauce, Toast); Antiemetics Diclegis (Doxylamine + Pyridoxine) is only FDA-approved med for this; also metoclopramide, diphenhydramine, ondansetron (cleft palate risk) or promethazine
Hypothalamic Amenorrhea	Clinical Intervention	Check labs: TSH, B-hCG, T3/T4, FSH, Prolactin, LH, Testosterone; Pelvic US; MRI (pituitary); Pelvic Exam Lifestyle mods, unusual stress, including extreme diet & exercise habits
Hypothalamic Amenorrhea	Using Diagnostic and Laboratory Studies	Normal/decreased FSH & LH, decreased Estradiol, Normal Prolactin
Hypothalamic Amenorrhea	Pharmaceutical Therapeutics	Clomiphene (to stimulate GnRH secretion from the hypothalamus)
Menopause	Using Diagnostic and Laboratory Studies	FSH assay most sensitive initial test (increased serum FSH > 30 IU/mL). Increased serum FSH, increased LH, decreased estrogen. Androstenedione levels don't change. Estrone is the predominant estrogen after menopause.
Menorrhagia	Pharmaceutical Therapeutics	OCP's: regulates the cycles, thins endometrial lining. Progesterone: orally or IUD (Mirena reduces bleeding in 79-94%). GnRH agonists: Leuprolide with add-back progesterone (to reduce the S/E of Leuprolide).
Menstruation, Normal Cycle	Applying Basic Scientific Concepts	stimulated by estrogen (follicular phase); menses stops and the lining of the uterus thickens. Follicles develop. Mid-cycle, 30 hrs after LH surges, the follicle releases an ovocyte (ovulation). Ovocyte only lives for 24 hrs without fertilization. The dominant follicle in the ovary becomes a corpus luteum (producing progesterone). The uterus lining then changes to prepare for potential implantation of any embryo to establish a pregnancy. If implantation does not occur within ~2 weeks, the corpus luteum will cease. The hormone drop causes the uterus to shed its lining in a process termed menstruation.
Molar Pregnancy	Clinical Intervention	1. Surgical uterine evacuation: suction curettage = mainstay - asap to avoid risk of choriocarcinoma. Followed weekly until beat HCG levels fall to undetectable level. Hysterectomy also an option. Rhogam to Rh(-) moms. Avoid pregnancy for 1 year. 2. METS: Chemotherapy (Methotrexate) destroys trophoblastic tissue &/or hysterectomy.

PROBLEM	TASK CATEGORY	ANSWER
Mucopurulent Cervicitis	Applying Basic Scientific Concepts	Depends on the cause, but 1st obtain culture; Empirically tx with Ceftriaxone + Azithromycin + Metronidazole +/- Doxycycline while awaiting results.
Mucopurulent Cervicitis	Clinical Intervention	Need a culture for GC and Chlamydia.
Multiple Gestation	Using Diagnostic and Laboratory Studies	Dizygotic (fraternal): due to fertilization of 2 ova by two different sperm cells. Monozygotic (identical) formed from the fertilization of 1 ovum. Ultrasound. May have intrauterine growth restrictions.
Normal Morning Sickness	Formulating Most Likely Diagnosis	Nausea and vomiting up until 16 weeks.
Ovarian Cancer	Clinical Intervention	1. Early Stage: TAH-BSO + selective lymphadenectomy 2. Surgery: tumor debulking. Serum CA-125 used to monitor tx progress. 3. Chemotherapy: Paclitaxel (Taxol) + Cisplatin or Carboplatin
Padget's Disease of the Breast	History Taking and Performing Physical Exam	Chronic eczematous itchy, scaling rash on the nipples & areola (may ooze). A lump is often present.
Placenta Previa:	Formulating Most Likely Diagnosis	abnormal placenta placement on or close to cervical os. 3rd trimester bleeding (bright red); No abdominal pain; soft/nontender uterus; no fetal distress usually
Placenta Previa	Using Diagnostic and Laboratory Studies	Pelvic Ultrasound. Do not perform pelvic exam.
Placental Abruption	History Taking and Performing Physical Exam	3rd trimester bleeding (dark red) + severe abdominal pain; fetal bradycardia/ distress. Tender/rigid uterus. Ask about RF's: maternal HTN (MC), smoking, ETOH, cocaine, folate deficiency, high parity, increased age, trauma, chorioamnionitis.
Plan B	Pharmaceutical Therapeutics	Emergency contraception (i.e. "Morning After Pill")- uses Progestin to stop ovaries from releasing an egg. Most effective if taken within 72 hours after unprotected intercourse and continues to be effective for up to 5 days to help prevent pregnancy. Typically taken as a single dose pill.
Polycystic Ovarian Syndrome	Applying Basic Scientific Concepts	PCOS is due to insulin resistance (type 2 DM); associated with abnormal function of H-P-O axis --> increase insulin & increase LH-driven increase in ovarian androgen production.
Polycystic Ovarian Syndrome	Formulating Most Likely Diagnosis	Triad of 1. amenorrhea (chronic anovulation), 2. obesity, 3. hirsutism (androgen excess)
Polycystic Ovarian Syndrome	History Taking and Performing Physical Exam	menstrual irregularities (2ry amenorrhea), hirsutism, acne, +/- male pattern baldness; Type 2 DM; obesity, HTN PE: bilateral enlarged, smooth, mobile ovaries on bimanual exam; acanthosis nigricans
Polycystic Ovarian Syndrome	Using Diagnostic and Laboratory Studies	High androgen levels, irregular periods, and cysts in the ovaries. A pelvic exam, blood tests and US can confirm the dx. Also, acne, extra hair growth on face/chin/ body may arise. Fm medical hx such as if your mother had PCO or problems getting pregnant. Labs: decreased FSH, increased LH, increased testosterone, increased estrogen, low SHBG (sex hormone binding globulin), androstenedione (higher than normal). Separately could run HCG to determine if prego.
Polycystic Ovarian Syndrome	Pharmaceutical Therapeutics	1. Combination OCP's = mainstay of Tx. Avoid androgenic progesterone (norgestrel, levonorgestrel) 2. Anti-androgenic agents for hirsutism: spironolactone (but it's teratogenic, so must be used with OCP's), leuprolide, finasteride 3. Infertility: clomiphene re-establishes ovulation; Metformin if abnormal LH:FSH ratios 4. Lifestyle: diet, exercise, wt. loss. 5. Surgical if Clomiphene unsuccessful (ex. wedge resection)
Polycystic Ovarian Syndrome	Health Maintenance, Patient Education, & Preventative Measures	PCOS pts at increased risk for infertility, endometrial hyperplasia, endometrial cancer. Also increased risk of atherosclerosis & HTN due to insulin resistance.
Preeclampsia	Formulating Most Likely Diagnosis	HTN + proteinuria +/- edema after 20 weeks gestation. Sxs of HTN (HA, visual sxs, fetal growth restriction).

PROBLEM	TASK CATEGORY	ANSWER
Preeclampsia	History Taking and Performing Physical Exam	Occurs > 20 weeks up to 6 weeks postpartum; HTN, proteinuria, edema, hyperreflexia
Preeclampsia	Health Maintenance, Patient Education, & Preventative Measures	RF = nlliparity. Control HTN. Educate pt to be aware of signs of HTN (HA, visual changes); watch for signs of edema. Steroids to mature fetal lungs if <34 weeks & elective delivery planned.
Pregnancy after previous Cesarean Delivery	History Taking and Performing Physical Exam	A vaginal birth after cesarean (VBAC) is considered a safe option. Rare cases where it's not safe include: placenta previa, if inverted T incision w/ prior pregnancy, heart disease, SOB. Benefits to VBAC: baby is less likely to have respiratory problems after birth, less pain/quicker recovery, less complications such as bleeding, infection, & blood clots. Less risk to future pregnancies of placenta problems: ectopic pregnancy & stillbirth. Repeat elective C-section is safe option as well. Mom will know what to expect & risk of emergency C-section during labor minimized.
Pregnancy, Gestational Diabetes	Health Maintenance, Patient Education, & Preventative Measures	RF's: family hx or prior hx of gestational DM, spontaneous abortion, Hx of infant > 4,000g @ birth, multiple gestations, obesity, >25 YO, AA, hispanics, Asian/Pacific Islander & Native American. Mom has >50% chance of developing DM after pregnancy (& >50% chance of recurrence in subsequent pregnancies). Screen mom 6 weeks post-partum for DM and yearly afterwards.
Pregnancy, HTN	History Taking and Performing Physical Exam	Check BP. Ask about sxs of HTN such as HA, visual sxs. Check for fetal growth restriction. Look for edema (due to proteinuria). Increased DTR's.
Pregnancy, Normal Findings (Nausea & Vomiting)	Applying Basic Scientific Concepts	Having a healthy pregnancy includes getting early/regular prenatal care. This includes exercising and preventing 2nd hand smoke exposure. In addition to progesterone and estrogen, HCG spikes in early pregnancy. Levels double every 2 days in the 1st 10 weeks of pregnancy. This prepares the placenta which allows the growing fetus to be supplied with nutrients/O2 and provides a route to remove toxic waste. During pregnancy, cardiac output increased (achieved by increasing stroke volume), CO peaks around week 24 of pregnancy. Also a 50% increase in the volume of plasma and a 20% increase in RBC & WBCs.
Pregnancy, parturition	Applying Basic Scientific Concepts	Parturition = childbirth. There are 3 stages: stage 1: onset of labor (true regular contractions) to full dilation of cervix (10 cm). Latent Phase & Active phase. Stage 2: Time from full cervical dilation until delivery of the fetus. Passive Phase & Active Phase Stage 3: Postpartum until delivery of the placenta. 0-30 minutes usually (Average is 5 min). The period 1-2 hours after delivery where the mother is assessed for complications is sometimes called the 4th stage.
Pregnancy, premature labor	History Taking and Performing Physical Exam	Ask about any hx of prior premature deliveries (before 37 weeks gestation). Regular uterine contractions (>4-6/hr) with progressive cervical changes (effacement & dilation) before 37 weeks. Premature labor if cervical dilation > 3 cm and/or > 80% effacement. Nitrazine pH paper test turns blue if pH >6.5 (amniotic fluid). Presence of fetal fibronectin between 20-34 weeks strongly suggests preterm labor. Rule out infections: UTI, Group B strep. L:S ratio <2:1 = fetal lung immaturity.
Pregnancy, Rh isoimmunization	Clinical Intervention	RhoGAM given if RH negative, Ab-negative in 3 situations: 1. @ 28 weeks gestation, AND 2. within 72 hours of delivery of an Rh positive baby or 3. after any potential mixing of blood (spontaneous abortion, vaginal bleeding, etc.)
Rectocele	Clinical Intervention	1. Prophylactic: Kegel's, wt. control 2. Non-surgical: Pessaries (symptomatic relief), estrogen tx (improves atrophy) 3. Surgical: Hysterectomy; uterosacral or sacrospinous ligament fixation
Sterilization	Clinical Intervention	Women: tubal ligation; TAH-BSO Males: vasectomy
Transitional (Gestational) HTN	Formulating Most Likely Diagnosis	HTN after 20 weeks gestation; No proteinuria; Resolves 12 weeks postpartum. Clinically asx.

PROBLEM	TASK CATEGORY	ANSWER
Uterine Leiomyoma	Clinical Intervention	Observation if asx- most don't need tx. Medical tx to decrease estrogen: progestins (medroxyprogesterone or leuprolide). Surgical: myomectomy (preserves fertility), endometrial ablation or hysterectomy (in women who have completed childbearing)
Vaginal bleeding in neonate	Health Maintenance, Patient Education, & Preventative Measures	This is normal and called false menses. The cause is the sudden drop-off in the mother's estrogen (a hormone) after birth. The blood-tinged or pink discharge should not last more than 3 or 4 days.

PROBLEM	TASK CATEGORY	ANSWER
ENDOCRINE		
Acromegaly	Using Diagnostic and Laboratory Studies	Pituitary adenoma causing hypersecretion of Growth Hormone (GH) after the closure of the epiphyses. Screening Test: exogenous insulin-like growth factor 1 (IGF-1) Confirmatory Test: Oral Glucose Suppression Test- increased GH levels in acromegaly MRI of the pituitary
Acromegaly	History Taking and Performing Physical Exam	DM and glucose intolerance. Enlargement of hands, feet, skull, and jaw (Macrognathia), coarse facial features, increased spaces b/w teeth, HA, deepened voice, thick moist skin (doughy)
Acromegaly	Clinical Intervention	1. Transsphenoidal Surgery + Bromocriptine 2. Radiation therapy if IGF-1 levels stay elevated after surgery 3. Octreotide: somatostatin analog that suppresses GH secretion 4. Pegvisomant: GH antagonist; may be added to Octreotide
Adrenal Crisis	Applying Basic Concepts	MCC = abrupt withdrawal of glucocorticoids; shock = primary manifestation (decreased BP, hypovolemia)
Adrenal Crisis	Pharmaceutical Therapeutics	1. IV fluids: normal saline to correct hypotension & hypovolemia (D5NS if hypoglycemic) 2. Glucocorticoids: IV Hydrocortisone (if known Addison's); Dexamethasone (if undiagnosed) 3. Reversal of electrolyte disorders 4. Fludricortisone (Florinef): synthetic mineralocorticoid similar to aldosterone
Adrenal Insufficiency	Using Diagnostic and Laboratory Studies	Baseline 8 am ACTH, cortisol, & renin levels obtained. 1. High Dose ACTH (Cosynotropin) Stimulation Test = Screening test 2. CRH Stimulation Test: differentiates b/w the causes of adrenal insufficiency
Adrenal Insufficiency	Pharmaceutical Therapeutics	1ry (Addison's): Glucocorticoids + Mineralocorticoids vs. 2ry: only glucocorticoids Glucocorticoids (ex. Dexamethasone, Hydrocortisone); Mineralocorticoids (ex. Fludricortisone)
Adrenocortical Insufficiency	Formulating Most Likely Diagnosis	Trunk (abdominal, flank, back, or lower chest) pain with anorexia, nausea, or vomiting; weakness & muscle aches; hypotension; fever; confusion or disorientation; hyperpigmented skin changes; salt cravings; hypoglycemia; mild hyponatremia; hyperkalemia; metabolic acidosis
Adrenocortical Insufficiency (Addison Disease)	History Taking and Performing Physical Exam	Hypotension (orthostatic), syncope, dizziness; abdominal pain, fever, hyperpigmented skin; weakness/muscle aches, myalgia; wt. loss, appetite loss; salt cravings; loss of libido, amenorrhea, loss of axillary/pubic hair
Arthropathy, Charcot (joint)	Formulating Most Likely Diagnosis	aka diabetic foot. Joint damage & destruction as a result of peripheral neuropathy from DM, peripheral vascular disease, or other disease. Repetitive microtrauma to foot with no sensation & autonomic dysfunction leads to bone resorption & weakening. MC affects the midfoot. Pain, swelling, alteration of the shape of the foot, ulcer, or skin changes. Radiographs show obliteration of joint space, scattered chunks of bone in fibrous tissue.
Cushing Syndrome, idiopathic	Formulating Most Likely Diagnosis	Sxs secondary to excess cortisol and glucocorticoids: redistribution of fat: central (trunk) obesity, "moon facies", buffalo hump, supraclavicular fat pads catabolism (breakdown) of protein: wasting of extremities (thin extremities, proximal muscle weakness) skin atrophy (easy bruising & striae). Increased infections (fungal); Hyperpigmentation with increased ACTH. HTN, Osteoporosis, Hypokalemia; Acanthosis nigricans; wt. gain; Psych: depression, mania, psychosis; Androgen excess: hirsutism, oily facial skin, acneiform rash, increased libido, virilization, amenorrhea
Cushing's (Hypercortisolism)	Using Diagnostic and Laboratory Studies	Screening Tests (to dx Cushing's syndrome): 1. Low-Dose Dexamethasone Suppression Test, 2. 24 Hr Urinary Free Cortisol Levels, 3. Salivary Cortisol Levels Differentiating Test (to distinguish the causes of Cushing's Syndrome): 4. High-Dose Dexamethasone Suppression Test, 5. ACTH levels

PROBLEM	TASK CATEGORY	ANSWER
Cushing's (Hypercortisolism)	Clinical Intervention	1. Cushing's Disease (Pituitary) --> Transsphenoidal surgery; radiation therapy if unresectable 2. Ectopic ACTH-secreting or Adrenal Tumors --> tumor removal; ketoconazole or metyrapone may be used in inoperable pts 3. Iatrogenic Steroid Therapy --> gradual steroid taper (to prevent Addisonian Crisis)
Diabetes Insipidus (DI)	Applying Basic Concepts	Due to either 1. ADH (vasopressin) deficiency (Central DI) or 2. Insensitivity to ADH (Nephrogenic DI). Both central and nephrogenic DI lead to --> inability of the kidney to concentrate urine --> production of large amounts of dilute urine
Diabetes Insipidus (DI)	Formulating Most Likely Diagnosis	Pts usually only become clinically symptomatic with decreased oral free water intake. Polyuria (up to 20 L/day), Polydipsia, nocturia (may manifest as enuresis in children); Hypernatremia (increased serum osm) if severe or decreased oral water intake. Dehydration, hypotension, rapid vascular collapse in severe cases.
Diabetes Insipidus (DI)	Using Diagnostic and Laboratory Studies	1. Fluid Deprivation Test: established the diagnosis of diabetes insipidus. Continued production of dilute urine = DI (decreased Uosm < 200 and low specific gravity < 1.005). 2. Desmopressin (ADH) Stimulation Test: differentiate nephrogenic from central DI. Administer Desmopressin (ADH): Central DI --> reduction in urine output (increased Uosm) indicating a response to ADH. Nephrogenic DI --> continued production of dilute urine (no response to ADH).
Diabetes Insipidus (DI)	Clinical Intervention	1. Central DI: Desmopressin/DDAVP; Carbamazepine 2. Nephrogenic DI: Na+/protein restriction --> HCTZ; indomethacin potentiates effects of ADH; Amiloride may be used if due to Lithium. 3. If symptomatic --> hypotonic fluid (pure water orally preferred, D5W, 1/2 NS)
Diabetes Mellitus and Lactic Acidosis	Pharmaceutical Therapeutics	Acidosis usually resolves with IV fluids & insulin. Bicarbonate only in severe acidosis (associated with many complications -ex. increased rate of cerebral edema)
Diabetic Hypoglycemia	Formulating Most Likely Diagnosis	Acute altered mental status. A complication of DM. Usually due to too much insulin use, too little food intake, or excess exercise. Autonomic: sweating, tremors, palpitations, nervousness, tachycardia. CNS: HA, confusion, slurred speech, dizziness. Sxs occur when blood sugar @ 60 mg/dL. Brain dysfunction begins @ 50 mg/dL.
Diabetic Hypoglycemia	Clinical Intervention	Mild < 60 mg/dL: 10-15 g fast-acting carbohydrate, fruit juice, hard candy. Re-check in 15 min. Severe/Unconscious < 40 mg/dL: IV bolus of D50 or Inject glucagon SQ
Diabetic Ketoacidosis (DKA)	Using Diagnostic and Laboratory Studies	High anion gap metabolic acidosis: low pH/bicarb/CO2; increased RR (Kussmaul's respirations); (+) Ketones plasma glucose > 250, arterial pH < 7.3, bicarb usually < 15
Diabetic Ketoacidosis (DKA)	Clinical Intervention	Initial management: ABC, mental status, vital signs, volume status, screen for precipitating event. 1. IV fluids: critical first step! 2. Regular Insulin 3. Potassium repletion 4. Bicarbonate in severe acidosis Tx goal = closing of the anion gap
Diabetic Nephropathy	Using Diagnostic and Laboratory Studies	microalbuminuria = first sign of diabetic nephropathy. Increased BP accelerates renal deterioration. Albuminuria, anemia, acidosis; Kidney bx: Kimmelstiel-Wilson (nodular glomerulosclerosis: pink hyaline material around the glomerular capillaries from protein leakage)
Graves Disease	Clinical Intervention	Radioactive iodine = MC therapy - destroys thyroid gland; will need chronic synthroid (levothyroxine); Methimazole/PTU (PTU safe in pregnancy) BB (Propanolol) for tremors, anxiety, tachycardia, palpitations, diaphoresis Thyroidectomy: if compressive sxs, no response to meds or if pregnant

PROBLEM	TASK CATEGORY	ANSWER
Gynecomastia	Clinical Intervention	1. Supportive: stop offending meds (ex. spironolactone); observe if early (most regress). Ideal tx should start within first 6 months of onset.
Gynecomastia	Pharmaceutical Therapeutics	1. SERM (ex. Tamoxifen) 2. Aromatase inhibitors block estrogen synthesis - ex. Anastrozole (Arimidex), Letrozole (Femara) 3. Androgens used in hypogonadism (ex. DHEA)
Hyperaldosteronism	Formulating Most Likely Diagnosis	Refractory HTN (HA, flushing; diastolic BP usually more elevated than systolic); Low potassium (hypokalemia with a metabolic alkalosis), proximal muscle weakness, polyuria, fatigue, constipation; decreased DTR's; hypomagnesemia. Although most patients are volume expanded, they are not edematous.
Hyperaldosteronism	Using Diagnostic and Laboratory Studies	1. Labs: Hypokalemia with metabolic alkalosis 2. Aldosterone:Renin Ratio Screening: if hypertensive; most sensitive to distinguish 1ry vs. 2ry. ARR > 20 & plasma aldosterone > 20 & low plasma renin levels --> 1ry aldosteronism; High plasma renin levels = 2ry hyperaldosteronism. 3. Definitive Tests: Saline infusion test, sodium loading 4. CT/MRI to look for adrenal or extra-adrenal mass 5. EKG may show signs of hypokalemia (U wave)
Hyperaldosteronism	Clinical Intervention	1. Conn's Syndrome: Excision of adrenal aldosteronoma + Spironolactone 2. Hyperplasia: Spironolactone, ACEI, CCB; Correct electrolyte imbalances 3. 2ry (Renovascular HTN): Definitive = angioplasty; ACE-I
Hypercortisolism (Cushing Syndrome)	Applying Basic Concepts	Cushing's Syndrome = is from steroids; Cushing's Disease = from a pituitary adenoma Causes: 1. Iatrogenic: long term, high dose corticosteroid therapy = MCC overall. 2. Cushing's Disease: benign pituitary adenoma or hyperplasia. 3. Ectopic ACTH: ACTH secreting: small cell lung cancer, medullary thyroid cancer. 4. Adrenal Tumor: cortisol-secreting adrenal adenoma.
Hyperosmolar Coma	Pharmaceutical Therapeutics	This is Hyperosmolar Hyperglycemic Syndrome (HHS). Same tx as DKA. Mental status changes seen with HHS --> goal of tx is normal mental status
Hyperparathyroidism	Applying Basic Concepts	Primary (MC type): excess increased PTH production; MCC = parathyroid adenoma; Other causes: parathyroid hyperplasia/enlargement, lithium, MENI (hyperparathyroidism, pituitary tumors, pancreatic tumors), MENIIa (hyperparathyroidism, pheochromocytoma, medullary thyroid carcinoma) Secondary: increased PTH in response to hypocalcemia or Vit D. deficiency. Parathyroid tries to compensate by increasing PTH to increase calcium levels towards normal. MCC of 2ry is Chronic Kidney Failure (kidneys usually convert Vit D to usable form).
Hyperparathyroidism	Formulating Most Likely Diagnosis	Signs of hypercalcemia: "stones, bones, abdominal groans, psych moans"; decreased DTR's
Hyperplasia, Congenital adrenal	Formulating Most Likely Diagnosis	Autosomal recessive disorder; involves a deficiency of an enzyme in the sunethesis of cortisol, aldosterone, or both. The sex of the neonate is often initially unclear because of genital ambiguity.
Hyperprolactinemia	Pharmaceutical Therapeutics	1. Stop offending drug 2. Dopamine Agonists (Bromocriptine, Cabergoline)
Hyperthyroidism	Applying Basic Concepts	Types: 1. Graves Dz (MCC): autoimmune. MC in women 20-40 YO, worse with stress (pregnancy, illness) 2. Toxic Multinodular Goiter (Plummer Dz): autonomous functioning nodules. MC in elderly. 3. Toxic Adenoma: one autonomous functioning nodule 4. TSH-secreting pituitary adenoma
Hyperthyroidism	History Taking and Performing Physical Exam	1. Grave's Dz: diffuse enlarged thyroid, thyroid bruits. Lid lag, exopthalmos/proptosis (exclusive to Grave's), pretibial myxedema: nonpitting, edematous, pink to brown plaques/nodules on shines. 2.Toxic Multinodular Goiter & 3. Toxic Adenoma: diffuse enlarged thyroid. No skin/eye changes. Palpable nodule(s); dyspnea, dysphagia, stridor, hoarseness (laryngeal compression) 4. TSH-secreting pituitary adenoma: diffuse enlarged thyroid; bitemporal hemianopsia, mental "disturbances"

PROBLEM	TASK CATEGORY	ANSWER
Hypoparathyroidism	Applying Basic Concepts	2 MCC's are 1. Postsurgical (accidental damage/removal during neck/thyroid surgery), 2. autoimmune destruction; Others: radiation, hypomagnesemia (magnesium required for PTH production)
Hypoparathyroidism	Using Diagnostic and Laboratory Studies	carpopedal spasms, Trousseau's & Chvostek's sings; Increased DTR's. Triad: Hypocalcemia, decreased PTH, increased phosphate
Hypoparathyroidism	Clinical Intervention	Calcium supplemented & Vit D. IV calcium gluconate if severe.
Hypopituitarism	Applying Basic Concepts	Pituitary destruction or deficient hypothalamic pituitary stimulation. Congenital or acquired ex. tumor, infiltrative disease, bleeding into the pituitary (Sheehan's syndrome), pituitary infarction, XRT
Hypopituitarism	Formulating Most Likely Diagnosis	Subnormal secretion of pituitary hormones. Each pituitary hormone must be tested separately since there is a variable pattern.
Hypothyroidism	Using Diagnostic and Laboratory Studies	High serum TSH; Low serum free T4. Hashimoto's has (+) thyroid Ab present: thyroglobulin Ab, antimicrosomial & thyroid peroxidase Ab Decreased radioactive iodine uptake May check for iodine deficiency
Hypothyroidism	Pharmaceutical Therapeutics	Synthetic thyroxine (T4, Levothyroxine)
Hypothyroidism (Myxedema)	Formulating Most Likely Diagnosis	Myxedema Crisis = Extreme form of hypothyroidism; Fatigue, cold intolerance, wt. gain, constipation, dry skin, myalgia, and menstrual irregularities. Goiter may be present in both hypo/hyperthyroid states. Bradycardia, diastolic HTN, and a delayed relaxation phase of DTR's. Hypothermia, hypoglycemia, hyponatremia. Usually seen in elderly women with longstanding hypothyroidism in winter months.
Hypothyroidism (Myxedema)	Using Diagnostic and Laboratory Studies	Decreased T3/T4 (super low or undetectable); Increased TSH bradycardia, hypothermia, hypoventilation, hypotensive, hypoglycemia, hyponatremia; delayed relaxation phase of DTR's.
Klinefelter Syndrome	Applying Basic Concepts	Males with a 47XXY karyotype. Causes hypogonadism and small testes. Can lead to infertility. Also at increased risk for testicular cancer.
Klinefelter Syndrome	Formulating Most Likely Diagnosis	Pts appear normal prior to puberty --> tall, thin stature, long limbs. In adulthood they become obese and can have scoliosis, ataxia, mild developmental delays. Hypogonadism presents with small testicles, infertility (azoospermia), gynecomastia, and scarce pubic hair.
Klinefelter Syndrome	Using Diagnostic and Laboratory Studies	47XXY karyotype. Low serum testosterone.
Klinefelter Syndrome	Pharmaceutical Therapeutics	Testosterone supplemenation may help with secondary sex characteristics.
Pheochromocytoma	Applying Basic Concepts	Catecholamine-secreting adrenal tumor (chromaffin cells); secretes norepi & epi autonomously and intermittently; 90% benign; may be associated with MENII
Pheochromocytoma	Formulating Most Likely Diagnosis	2ry HTN, Palpitations, Headache, Excessive sweating; wt. loss (but increased appetite)
Pheochromocytoma	Using Diagnostic and Laboratory Studies	1. Increase in 24-hour urinary catecholamines (increased metanephrine & increased vanillylmandelic acid) 2. MRI or CT of abdomen to visualize adrenal tumor Labs: hyperglycemia, hypokalemia
Pheochromocytoma	Clinical Intervention	1. Complete Adrenalectomy. Pre-op non-selective alpha-blocker (Phenoxybenzamine or Phentolamine x 7-14 days) --> followed by BB's or CCB's to control HTN
Pituitary Adenoma	Using Diagnostic and Laboratory Studies	1. MRI: study of choice to look for sellar lesions/pituitary tumors 2. Endocrine studies: prolactin, GH, ACTH, TSH, FSH, LH

PROBLEM	TASK CATEGORY	ANSWER
Primary Adrenal Insufficiency (Addison's)	Applying Basic Concepts	Adrenal gland destruction (lack of cortisol AND aldosterone). Etiologies: 1. Autoimmune: MC in industrialized countries; causes adrenal atrophy; 2. Infection (MCC worldwide): TB, HIV, fungal, CMV; causes adrenal calcification; 3. Vascular: thrombosis or hemorrhage in the adrenal gland (Waterhouse-Friderichsen); Trauma. 4. Metastatic disease; Medications: Ketoconazole, Rifampin, Phenytoin, Barbiturates
Primary Hyperaldosteronism	Applying Basic Concepts	Is renin-independent (autonomous). Idiopathic or idiopathic bilateral adrenal hyperplasia (60%). MC in women. Conn's Syndrome: adrenal aldosteronoma (40%) located in the zona glomerulosa. Unilateral adrenal hyperplasia is rare.
Primary Hyperaldosteronism	Using Diagnostic and Laboratory Studies	1. Labs: Hypokalemia with metabolic alkalosis 2. Aldosterone:Renin Ratio Screening: ARR > 20 & plasma aldosterone > 20 & low plasma renin levels --> 1ry aldosteronism 3. Definitive: saline infusion (no decrease in aldosterone level); sodium loading (high urine aldosterone) 4. CT/MRI 5. EKG: hypokalemia (U wave)
Primary Hyperparathyroidism	Using Diagnostic and Laboratory Studies	1. Triad: increased Calcium, increased intact PTH, decreased Phosphate; increased 24 hr urine calcium excretion; increased Vit D 2. Osteopenia on bone scan (DEXA scan) 3. Imaging studies to detect parathyroid adenoma (CT or MRI)
Primary Hyperparathyroidism	Clinical Intervention	1. surgery - parathyroidectomy (subtotal- 3 1/2) or (total- remove all 4 glands w/ autotransplantation of parathyroid tissue in the forearm) 2. Vit D/Ca2+ supplementation if 2ry 3. Tx hypercalcemia if symptomatic (IV fluids, furosemide)
Short Stature, Hereditary	Using Diagnostic and Laboratory Studies	Check growth hormone levels???
SIADH	Applying Basic Concepts	Non-physiologic excess increased ADH from pituitary or ectopic source --> increased free water retention & impaired water excretion --> Hyponatremia & inability of the kidney to dilute the urine. The two normal stimuli that increases ADH secretion is hypovolemia or hyperosmolarity. In SIADH, the patient is both euvolemic & hypoosmolar, so increased ADH is considered inappropriate.
SIADH	Using Diagnostic and Laboratory Studies	1. Isovolemic Hypotonic Hyponatremia; Serum: decreased serum osm (<280), decreased Na+ (<135), decreased BUN, Hypouricemia 2. Urine: increased urine osm (>300) = concentrated urine despite decreased serum osm; UNa>20 3. Dx made in the absence of renal, adrenal, pituitary, thyroid disease or diuretic use.
SIADH	Clinical Intervention	Tx underyling cause when possible. Fluid restriction < 800 mL/day - 1L/day. Severe hyponatremia (usually below 120 mEq/L) or intracranial bleed --> requires IV hypertonic saline w/ furosemide. Avoid rapid correction of hyponatremia to prevent Central Pontine Myelinolysis (no faster than 0.5 mEq/L per hr)
Subacute Thyroiditis	Formulating Most Likely Diagnosis	Painful thyroiditis; MC after viral infxns/illness; associated with HLA-B35 Painful, tender neck/thyroid
Subacute Thyroiditis	Using Diagnostic and Laboratory Studies	Clinical hyperthyroidism in acute phase --> hypothyroid Increased ESR (hallmark); No thyroid antibodies; decreased RAIU
Subacute Thyroiditis	Clinical Intervention	Aspirin (no anti-thyroid meds)
Thyroglossal duct cyst	Formulating Most Likely Diagnosis	often presents as midline neck cysts closely associated with the hyoid bone. Often asx but can present as an abscess or intermittently drain sinus. Mass will elevate with tongue protrusion or swallowing.
Thyroid Cancer	Clinical Intervention	Surgical removal: 1. Total thyroidectomy, 2. subtotal thyroidectomy (may be coupled w/ radioiodine therapy &/or thyroid/TSH suppression with thyroid hormones May monitor thyroglobulin levels 6 months after thyroidectomy to look for residual cells. Done by giving recombinant TSH & then checking thyroglobulin levels.

PROBLEM	TASK CATEGORY	ANSWER
Thyrotoxicosis	Formulating Most Likely Diagnosis	Thyrotoxicosis is the condition that occurs due to excess thyroid hormone of any cause and therefore includes hyperthyroidism. Increased T3 & T4 with decreased TSH (TSH may be undetectable). Anxiety, emotional lability, weakness, tremor, palpitations, heat intolerance, sweating, and wt. loss, tachycardia, A-fib, high fever, nausea, vomiting, psychosis, tremors --> progresses to coma and hypotension; usually a precipitating event (surgery, trauma, infxn, illness, prego)
Thyrotoxicosis	Pharmaceutical Therapeutics	1. Anti-thyroid drugs: IV PTU or Methimazole, radioiodine, surgery 2. BB ASAP 3. Supportive: IV glucocorticoid; Cardiac monitoring, IV fluids, Avoid Aspirin; cooling blankets. Avoid Aspirin
Type 1 Diabetes Mellitus	Applying Basic Concepts	Pancreatic beta cell destruction (pt. is no longer able to produce insulin). Most commonly presents in childhood/young adult (onset usually <30YO). Type 1A: autoimmune beta cell destruction triggered by 1 or more environmental factors. Type 1B: non-autoimmune beta cell destruction.
Type 1 Diabetes Mellitus	Formulating Most Likely Diagnosis	1. Most are asymptomatic (may be incidental finding). 2. Classic sxs: polyuria, polydipsia, polyphagia, wt loss; DKA, HHS Pt may present with the following complications: neuropathy, retinopathy, neprhopathy, macrovascular, hypoglycemia
Type 1 Diabetes Mellitus	Pharmaceutical Therapeutics	Insulin therapy initiated in Type 1 DM.
Type 2 Diabetes Mellitus	History Taking and Performing Physical Exam	Classic sxs: polyuria, polydipsia, polyphagia, weight loss. Neuropathy complications: 1. Sensorimotor: stocking glove pattern, paresthesias, abnormal gait, decreased proprioception. 2. Autonomic: orthostatic hypotension, gastroparesis, nausea, vomitng, diarrhea, constipation. 3. CNIII Palsy: pupil size will remain normal. Retinopathy complications: diagnosed with fundoscopic exam, angiography. 1. Non-proliferative: microaneurysms, hard exudates, dot or flame hemorrhages, cotton wool spots. 2. Proliferative: neovascularization (growth of new, abnormal blood vessels). 3. Maculopathy: macular edema, blurred vision, central vision loss. Nephropathy Complications: kidney deterioration leading to microalbuminuria. DM is the MCC of end stage renal disease. Macrovascular Complications: atherosclerosis leading to CAD, peripheral vascular disease, stroke.
Type 2 Diabetes Mellitus	Pharmaceutical Therapeutics	Tx neuropathy with gabapentin. Tx retinopathy with Bevacizumab. Tx nephropathy with ACEI. Tx blood sugar with Antihyperglycemic meds or insulin.
Type 2 Diabetes Mellitus	Health Maintenance, Patient Education, and Preventative Measures	Weight reduction and exercise. Diet: Carbs 50-60%, Protein (15-20%), 10% unsaturated fats. Glucose control goals: HgbA1c < 7% (check q3 months if not controlled; check twice a year if controlled). Pre-prandial blood glucose goal 80-130 mg/dL; post-prandial goal <180 mg/dL (1hr). Lipid Control; Good foot care/podiatrist monitoring at least yearly. Yearly eye screening by an ophthalmologist. Yearly screening for microalbuminemia. Yearly checks of BUN & Creatinine.

PROBLEM	TASK CATEGORY	ANSWER
RENAL/GU		
Acidosis	Formulating the Most Likely Diagnosis	pH will be < 7.35 (acidic); acidosis stimulates increased respiratory rate (to blow off excess CO2). Metabolic acidosis is likely from DKA, uremia, sepsis, etc. vs. Respiratory acidosis can be from anything that causes hypoventilation (ex. CNS depression from drugs/CVA, PTX, airway obstruction, myopathy, pneumonia, pulmonary edema; COPD, obesity, MS, Guillain-Barre, etc.)
Acute Prostatitis	Applying Basic Scientific Concepts	prostate gland inflammation secondary to ascending infection. >35 YO: E. coli vs. < 35 YO: Chlamydia & Gonorrhea
Acute Prostatitis	Formulating the Most Likely Diagnosis	Fever, chills (in acute, not chronic); irritative sxs; obstructive sxs; low back/abdominal pain, perineal pain in acute (sxs usually more mild in chronic); Exquisitely tender hot, boggy prostate (vs. chronic usually nontender)
Acute Prostatitis	Using Diagnostic and Laboratory Studies	1. DRE 2. Urinalysis & Urine Culture: positive in acute; often negative in chronic. 3. Avoid prostatic massage in acute prostatitis (could cause bacteremia); often done in chronic to increase bacterial yield on UA/culture 4. Transrectal US: may be helpful for suspected prostatic abscess or calculi
Acute Renal Failure	Formulating the Most Likely Diagnosis	Elevated Bun and Cr with ratio < 20. This can be pre-renal (usually dehydration), renal (look at NSAIDs and ACEI use), or post-renal (prostate)
Acute Tubular Necrosis	Formulating the Most Likely Diagnosis	epithelial cell casts & muddy brown casts; waxy/granular casts (formed in damaged tubules); low specific gravity (unable to concentrate urine); Hyperkalemia, hyperphosphatemia.
Acute Tubular Necrosis	Pharmaceutical Therapeutics	Tx volume depletion- IV fluids Tx volume overload- diuretics (ex. furosemide) Tx hyperkalemia if severe and associated with EKG findings Tx metabolic acidosis- dialysis if pH <7.1 Tx hyperphosphatemia w/ dialysis if severe or oral phosphate binders if mild-mod. This will usually correct the low calcium.
Azotemia, Postrenal	Using Diagnostic and Laboratory Studies	usually bladder-scan the bladder for residual volume. There will be an elevated BUN & Cr
Azotemia, Pre-renal	Formulating the Most Likely Diagnosis	elevated BUN and Cr from problems in the systemic circulation that decreases flow to the kidneys (aka decreased renal perfusion) - hypovolemia Pre-renal = MC type AKI. May also be combined effect of afferent arteriole constriction (ex. NSAIDs, IV contrast) + efferent arteriole dilation (ex. ACE/ARB)
Benign Prostatic Hyperplasia (BPH)	History Taking and Performing Physical Exam	Ask: frequency in urination, nocturia, hesitancy, weak/intermittent stream force, incomplete emptying, and incontinence (extrinsic compression of the prostatic urethra) PE: DRE = uniformly enlarged, firm, rubbery prostate (if hard nodular - check prostate cancer)
Benign Prostatic Hyperplasia (BPH)	Using Diagnostic and Laboratory Studies	1. DRE; 2. Increased PSA; 3. urine cytology: if increased risk of bladder cancer (h/o tobacco, irritative bladder sxs, or hematuria)
Benign Prostatic Hyperplasia (BPH)	Clinical Intervention	1. Observation if mild- monitor annually; avoid antihistamines/anticholinergics Surgery: TURP
Benign Prostatic Hyperplasia (BPH)	Pharmaceutical Therapeutics	5-alpha-reductase inhibitors: Finasteride & Dutasteride --> MOA = androgen inhibitor & prostate size reduction/decreased need for surgery. SE's: sexual or ejaculatory dysfunction, decreased libido, breast tenderness/enlargement. Alpha-1 Antagonists/"blockers": Tamsulosin (Flomax- most uroselective), Alfuzosin, Doxazosin, Terazosin --> provides rapid sx relief but no effect on BPH clinical course. MOA= smooth muscle relaxer of prostate & bladder neck; decreased urinary resistance; SE's:other alpha-1 antagonist effects like hypotension, dizziness, retrograde ejaculation.
Bladder Cancer	Applying Basic Scientific Concepts	MC type is Transitional Cell Carcinoma (TCC). Biggest RF = smoking. Other RF's include occupational exposure (dyes, rubber, leather), age > 40, white males 3x MC, cyclophosphamide, pioglitazone Most present early & respond well to tx, but has the highest rate of reoccurrence of all cancers.

PROBLEM	TASK CATEGORY	ANSWER
Bladder Cancer	Formulating the Most Likely Diagnosis	Painless hematuria (gross or microscopic); irritative sxs (frequency, urgency, dysuria)
Bladder Cancer	Using Diagnostic and Laboratory Studies	Cystoscopy w/ biopsy (can be diagnostic or curative)
Bladder Cancer	Clinical Intervention	1. Localized or Superficial: transurethral resection (electrocautery) & follow-up every 3 months. 2. Invasive disease (advanced or involving muscular layer): radical cystectomy, chemo, radiation 3. Recurrent: BCG vaccine intravascular if electrocautery unsuccessful. Do not use if immunosuppressed or if gross hematuria present.
Bladder Injury	Using Diagnostic and Laboratory Studies	Ureteral contrast study w/ pelvic fracture. Look for blood at the meatus, high riding prostate, or scrotal hematoma.
Bladder Outlet Obstruction	Pharmaceutical Therapeutics	If due to BPH: alpha-1 blockers: Tamsulosin If decreased detrusor muscle activity (atony): cholinergic (ex. Bethanechol)
Chronic Kidney Disease	Using Diagnostic and Laboratory Studies	1. Proteinuria: single best predictor of disease progression; Spot U albumin/U creatinine Ratio (ACR), 24 Hr. urine collection 2. Urinalysis: broad waxy cast seen in ESRD 3. Estimated GFR 4. Increased BUN/Creatinine, serum electrolytes, lipid profile. Renal biopsy. 5. Renal Ultrasound: small kidneys classic.
Chronic Renal Failure	History Taking and Performing Physical Exam	Ask about hx of DM (MCC of ESRD), HTN (2nd MCC of ESRD), glomerulonephritis, vascular disease, polycystic kidney disease, tubulointerstitial disease, urinary tract obstruction or dysfunction, recurrent kidney stones, congenital birth defects of the kidney or bladder, any previous hx of acute kidney injury, etc.
Chronic Renal Failure	Health Maintenance, Patient Education, and Preventative Measures	A low-protein, low-salt diet; calcitriol is recommended for Vit D deficiency. HTN and proteinuria are the 2 most important modifiable RF's. HTN: BP goal < 140/90- ACEI/ARB; decrease sodium/water intake, diuresis Proteinuria: decrease protein intake, ACE/ARB for microalbuminuria or proteinuria DM control: Hgba1C < 6.5, hyperlipidemia control (LDL<100, TG<150, HDL>50) Dialysis if GFR < 10 mL/min &/or serum Cr > 8 mg/dL (if DM pt.: GFR < 15 &/or Cr > 6)
Chronic Renal Insufficiency	Pharmaceutical Therapeutics	control HTN (BP) with ACEI, diuretics. Proteinuria: ACEI/ARB DM control: Metformin, insulin Lipid Control: statins (LDL), Fibrates (decreases TG) Anemia: oral FeSO4 --> Erythropoietin or Darbepoetin-a if anemia persists after normal iron stores (goal Hgb 11-12) Coagulopathy: Desmopressin prior to surgical procedures Renal osteodystrophy: Vit D (calcitriol) & phosphate binders (calcium acetate); Sevelamer (Renagel) used if both calcium & phosphate levels elevated.
Contrast-induced Nephropathy	Pharmaceutical Therapeutics	volume expansion w/ isotonic saline (0.9% NaCl) or hypotonic saline (0.45% NaCl)
Cryptorchidism	Applying Basic Scientific Concepts	Undescended testicle. Increase risk in premature infants, low birth weight. MC on R-side.
Cryptorchidism	Clinical Intervention	1. Orchiopexy recommended as early as 6 months (ideally before 1 YO) 2. Observation if < 6 months of age. Most descend by 3 months. 3. can give hCG or gonadotropin releasing hormone to stimulate testosterone 4. Orchiectomy if detected at puberty to decrease risk of testicular cancer.
Cryptorchidism	Health Maintenance, Patient Education, and Preventative Measures	Complications include: testicular cancer, subfertility, testicular torsion, and inguinal hernia.
Cryptorchidism	Formulating the Most Likely Diagnosis	empty, small scrotum +/- inguinal fullness
Cystitis	Formulating the Most Likely Diagnosis	dysuria (burning), increased frequency, urgency, hematuria, suprapubic discomfort, pyuria, (+) leukocyte esterase, nitrites

PROBLEM	TASK CATEGORY	ANSWER
Cystitis	Pharmaceutical Therapeutics	Uncomplicated cystitis: 1. Nitrofurantoin (Macrobid), 2. FQ (ex. Cipro), 3. TMP-SMX (Bactrim) Complicated cystitis: FQ PO or IV, Aminoglycoside
Cystitis	Health Maintenance, Patient Education, and Preventative Measures	increase fluid intake, void after intercourse, Phenazopyridine (Pyridium) turns urine orange/not used more than 48 hours due to SE (methemoglobinuria, hemolytic anemia)
Dehydration	Formulating the Most Likely Diagnosis	Increased thirst; decreased capillary refill, dry mucous membranes, decreased skin turgor; neurologic changes such as headaches; decreased urine output (unless polyuria is the cause of dehydration), confusion, unexplained tiredness; may be due to diarrhea
Dehydration	Pharmaceutical Therapeutics	Electrolyte replenishment. Rehydration fluids contain glucose, sodium and potassium. +/- Ondansetron (Zofran)
Diabetic Nephropathy	Using Diagnostic and Laboratory Studies	Persistent albuminuria (>300 mg/d) that is confirmed on at least two occasions 3-6 months apart. A relentless decline in the GFR. Elevated arterial BP. Anemia, Acidosis. Kidney biopsy: Kimmelstiel-Wilson
Drug, Adverse Effect Diuretics	Pharmaceutical Therapeutics	Mannitol SE: pulmonary edema Acetazolamide SE: hyperchloremic metabolic acidosis, sulfa allergies, kidney stones (calcium & phosphate) Loop Diuretics SE: Hypokalemia, hypocalcemia, hypomagnesemia, hyperglycemia, hyperuricemia, ototoxic, sulfa allergy, hypochloremia metabolic alkalosis, NSAID's decrease efficacy. Thiazides SE: Hyponatremia, hypokalemia, hypercalcemia, hyperlipidemia, hyperuricemia, hyperglycemia, sulfa allergies, metabolic alkalosis K+ Sparing SE: hyperkalemia, metabolic acidosis, gynecomastia
Enuresis, Childhood, Nocturnal	Health Maintenance, Patient Education, and Preventative Measures	Many children overcome incontinence naturally (without tx) as they grow older. Meds not recommended under 6 YO. 1. Behavior therapy: regular voiding schedule, pee before bed, wake child up to pee intermittently, avoid caffeine/sugar drinks, fluid restriction; continence training. 2. Enuresis alarm
Enuresis, Childhood, Nocturnal	Pharmaceutical Therapeutics	Desmopressin (DDAVP), TCA's (Imipramine), anticholinergics
Epididymitis	Applying Basic Scientific Concepts	Epididymal pain and swelling secondary to retrograde infection or reflux of urine. Epididymitis usually bacterial. Acute Epididymitis: Men <35 YO - Chlamydia MC +/- viral in children (Mumps MC); Men > 35 YO & Children- E.coli, Klebsiella Chronic Epididymitis: > 6 weeks secondary to inadequate tx of acute cases, chronic disease, Mycobacterium tuberculosis
Erectile Dysfunction	Applying Basic Scientific Concepts	inability to generate or maintain an erection. May be due to: DM, psychogenic, vascular (atherosclerosis), prolactinoma, trauma, surgery, meds (ex. BB, HCTZ, CCB, SSRI's, TCA's). Abrupt onset likely psychological vs. gradual worsening indicates systemic causes.
Exercise-induced hematuria	Clinical Intervention	Decrease intensity/frequency of exercise; fluids
Glomerulonephritis	Applying Basic Scientific Concepts	immunologic inflammation of the glomeruli causing protein AND RBC leakage into the urine. HTN, hematuria (RBC casts), dependent edema (proteinuria) & azotemia = hallmark. Etiologies include: IgA nephropathy, Post-infectious (MC after GABHS), Membranoproliferative/Mesangiocapillary (ex. HCV), Goodpasture's disease, and Vasculitis.
Glomerulonephritis	Using Diagnostic and Laboratory Studies	Urinalysis: hematuria (RBC casts), dysmorphic RBC's, proteinuria (usually < 3g/day but may be in the nephrotic range), high specific gravity > 1.020 osm.; increased BUN & Cr; Renal biopsy= gold standard (not needed if post-strep)
Goodpasture's Disease	Formulating the Most Likely Diagnosis	cause of acute glomerulonephritis (AGN); presents with rapidly progressive glomerulonephritis (RPGN) --> crescent formation on biopsy; (+) Anti-GBM antibodies in kidney & lung alveoli --> kidney failure & hemoptysis. Often occurs post-URI

PROBLEM	TASK CATEGORY	ANSWER
Goodpasture's Disease	Using Diagnostic and Laboratory Studies	linear IgG deposits
Goodpasture's Disease	Pharmaceutical Therapeutics	high dose corticosteroids + cyclophosphamide + plasmapheresis (removes antibodies)
Hemolytic Uremic Syndrome (HUS)	Applying Basic Scientific Concepts	Intravascular hemolysis can produce Acute Tubular Necrosis (ATN) due to hemoglobinuria. Sxs: red/brown urine and plasma, decreased haptoglobin, increased LDH, deteriorated renal function, fraction excretion of sodium (FENa) <1%. Tx: hemodialysis
Hemolytic Uremic Syndrome (HUS)	Formulating the Most Likely Diagnosis	Triad: 1. Thrombocytopenia, 2. Microangiopathic hemolytic anemia, 3. Kidney failure. Suspect HUS if child w/ renal failure w/ diarrhea prodrome.
Hemolytic Uremic Syndrome (HUS)	Clinical Intervention	1. Observation & IV fluids in most kids. 2. plasmapheresis (+/- FFP) if severe. Antibiotics may worsen.
Hydrocele	History Taking and Performing Physical Exam	Ask about hx of patent processus vaginalis that failed to close. In infants, it is congenital. Adults ask about hx of injury, infection or inflammatory etiologies. On physical exam: Cystic testicular fluid collection; painless scrotal swelling; ask about any dull aching/heavy sensation. Swelling worse with Valsalva; (+) transillumination. Must rule out testicular tumor.
Hydronephrosis	Applying Basic Scientific Concepts	distention of renal calyces & pelvis w/ urine as a result of obstruction of outflow of urine distal to the renal pelvis
Hydronephrosis	Using Diagnostic and Laboratory Studies	1. UA: to assess for infxn/pyuria, microscopic hematuria (stone or tumor) 2. CBC: leukocytosis (acute infxn) 3. BUN/Cr; hyperkalemia 4. Bladder Catheter; 4.5 plain film radiographs 5. Renal Us --> CT
Hypercalcemia	Applying Basic Scientific Concepts	90% of cases due to primary hyperparathyroidism (MC overall) or malignancy. PTH-mediated (1ry hyper parathyroid)- increased calcium + increased intact PTH + decreased phosphate Malignancy (secretes increased PTH-related protein), decreased intact PTH
Hypercalcemia	Formulating the Most Likely Diagnosis	stones, bones, abdominal groan (ex. ileus, constipation), psych moans; decreased DTR's
Hypercalcemia	Using Diagnostic and Laboratory Studies	Increased ionized calcium, increased total serum calcium (>10 mg/dL); check PTH-related protein, 1,25 Vit D level, 24 hr. urinary calcium; EKG: shortened QT interval, prolonged PRI, wide QRS
Hypercalcemia	Pharmaceutical Therapeutics	Mild: No tx Severe/symptomatic: IV saline --> furosemide; avoid HCTZ; calcitonin/ bisphosphonate if severe
Hyperkalemia	Applying Basic Scientific Concepts	Etiologies: acute or chronic renal failure (esp. dialysis pts), eating lots of bananas, hypoaldosteronism, adrenal insufficiency, K+sparing diuretics/ACEI/Digoxin/BB/ NSAIDs; rhabdomyolysis, burns, hypovolemia, metabolic acidosis (DKA), Lab Error
Hyperkalemia	Using Diagnostic and Laboratory Studies	Potassium > 5.0 mEq/L; glucose, bicarbonate part of the workup; +/- CBC (hemolysis); +/- CK (rhabdomyolysis) EKG: tall peaked T waves --> QR interval shortening, wide QRS, prolonged PRI --> P wave flattening --> sine wave --> arrhythmias
Hyperkalemia	Pharmaceutical Therapeutics	If EKG changes, start with calcium to protect the heart (IV calcium gluconate). Then we shift potassium into the cell with either bicarb or insulin/dextrose. Then clear it from the body with Kayexalate or dialysis.
Hypocalcemia	Using Diagnostic and Laboratory Studies	decreased ionized Calcium, decreased total serum calcium (< 8.5 mg/dL); +/- increased phosphate, decreased magnesium. Check PTH, BUN/Cr; EKG: prolonged QT interval, shortened PRI, narrow QRS

PROBLEM	TASK CATEGORY	ANSWER
Hypokalemia	Formulating the Most Likely Diagnosis	MCC are diuretic therapy, vomiting, diarrhea; can also be from metabolic alkalosis, vitamin B12 tx. Pt may present with severe muscle weakness (including respiratory), rhabdomyolysis; nephrogenic DI: polyuria, cramps, N/V, decreased DTR's. May have palpitations, arrhythmias. EKG will show T wave flattening --> prominent U wave.
Hyponatremia	Using Diagnostic and Laboratory Studies	Serum Na < 135. May order urine sodium & urine osmolality.
Hypovolemia	Pharmaceutical Therapeutics	Tx with volume - crystalloids (NS or LR). If blood loss, stop bleeding & give blood. Electrolyte replacement as needed and if giving massive blood transfusion, give platelets and FFP with RBC's
Hypovolemia	Applying Basic Scientific Concepts	Low volume - wide pulse pressure. Increased HR and decreased BP with standing.
Hypovolemic Shock	Formulating the Most Likely Diagnosis	Loss of blood or fluid volume leads to increased PVR & increased HR to maintain CO. Pt with either hemorrhage (ex. GI bleed, AA, rupture, etc.) or with fluid loss (ex. GI- vomiting, diarrhea; pancreatitis, severe burns, etc.). Decreased CO, decreased PCWP, increased SVR. Pale/cool/mottled skin, prolonged capillary refill, decreased skin turgor, dry mucous membranes; usually no severe respiratory depression.
Hypovolemic Shock	Pharmaceutical Therapeutics	Volume resuscitation: crystalloids (NS or LR); control the source of hemorrhage: +/- Packed RBC's (O negative or cross-matched); treat any coagulopathies
IgA Nephropathy	Using Diagnostic and Laboratory Studies	(+) IgA mesangial deposits on immunostaining.
Immobilization	Health Maintenance, Patient Education, and Preventative Measures	
Impotence, Organic Origin	Applying Basic Scientific Concepts	Etiologies: Neurologic (ex. DM), vascular (atherosclerosis), prolactinoma, trauma, surgery, meds (BB, HCTZ, CCB, SSRI's, TCA's). Strong correlation b/w HTN & ED; also b/w BPH & ED. Psychogenic is non-organic cause.
Impotence, Organic Origin	History Taking and Performing Physical Exam	Inability to generate or maintain an erection? Get sexual, medical, or psych hx. PE: check BP, peripheral pulses, sensation, examine genitalia & prostate size/texture of testes, presence of epididymis and vas deferens, abnormalities of penis (hypospadias, Peyronie). Do DRE if suspect BPH.
Impotence, Organic Origin	Clinical Intervention	1. Do Hx and PE (BP, DRE). 2. Check testosterone, LH, prolactin, TSH, HgbA1c, CBC, lipid panel, PSA, UA. 3. Direct injection of PGE1 (Alprostadil) into corpora cavernosa will create erection in 5 min if blood vessels capable of dilating. 4. Nocturnal Penile Tumescence to evaluate sleep erections. 5. Duplex US to evaluate penile blood flow.
Impotence, Organic Origin	Pharmaceutical Therapeutics	1. PDE5 Inhibitor: Sildenafil, Tadalafil, Vardenafil 2. PGE1 injection 3. Vacuum pump, penile revascularization, penile prosthetics 4. Testosterone if low
Interstitial Cystitis	Using Diagnostic and Laboratory Studies	The diagnosis is most often made when long-standing urinary frequency, urgency, and pelvic pain exists in the absence of a readily identifiable etiology such as UTI. Urinalysis (UA) and Urine culture are mandatory. A voiding diary is helpful in establishing baseline voiding frequency. +/- Cystoscopy, Cystography, Voiding cystourethrography. MRI,CT,& pelvic US may be performed when clinically indicated to evaluate for a suspected pelvic mass that is causing compression of the bladder or for an adjacent inflammatory process (ex. diverticulitis). Additional studies: urethral and vaginal culture.
Interstitial Nephritis	Formulating the Most Likely Diagnosis	Acute kidney injury (AKI) with increased eosinophils; fever, maculopapular rash, arthralgias; WBC casts = pathognomonic; urine eosinophils
Kidney Cyst, Simple	Clinical Intervention	1. Ultrasound to distinguish it from carcinoma- echoic round mass with smooth & sharply demarcated wall = simple cyst. 2. +/- CT scan - sharp demarcation, smooth/thin wall, homogeneous fluid, no contrast enhancement; slow growth

PROBLEM	TASK CATEGORY	ANSWER
Lactic Acidosis	Formulating the Most Likely Diagnosis	Increased RR/K+/anion gap. Decreased pH, CO2, and bicarb (blood gases). This is usually due to sepsis, yet can also be a complication of metformin.
Lactic Acidosis	Using Diagnostic and Laboratory Studies	Increased RR/K+/anion gap. Decreased pH, CO2, and bicarb (blood gases).
Medullary Sponge Kidney	Formulating the Most Likely Diagnosis	Patients may be asx. +/- recurrent nephrolithiasis or recurrent UTI's, sterile pyuria, renal colic often with hematuria
Metabolic Alkalosis	Formulating the Most Likely Diagnosis	seen in prolonged vomiting (ex. norovirus in kids; bulimia nervosa); increased bicarb/pH/CO2
Minimal Change Disease	Applying Basic Scientific Concepts	80% of Nephrotic syndrome in kids. Etiologies: idiopathic +/- assoc. w/ viral infxns, allergies (ex. insect stings, NSAIDs).
Minimal Change Disease	Using Diagnostic and Laboratory Studies	No visible cellular changes seen on simple light microscopy but podocyte damage/Loss/fusion/diffuse effacement of the foot processes & loss of negative charge of the glomerular basement membrane.
Minimal Change Disease	Pharmaceutical Therapeutics	Prednisone = Tx of choice. Cytotoxic therapy with Cyclosporine if refractory.
Mixed Urinary Incontinence	Mixed Urinary Incontinence	combination of stress + urge.
Nephrolithiasis	Using Diagnostic and Laboratory Studies	1. UA: microscopic or gross hematuria; nitrites if infectious. Urine pH 5.5-6.8 (calcium oxalate/phosphate), <5.0 (uric acid, cystine), >7.2 (struvite). 2. Non-contrast CT abdomen/pelvis = MC initial diagnostic test 3. Renal Ultrasound: detects stones or complications (hydronephrosis) used if CT is contraindicated 4. KUB radiographs: only calcium & struvite stones are radiopaque (visible on radiographs) 5. IV pyelography = gold standard. Determines extent of obstruction and severity.
Nephrolithiasis	Clinical Intervention	May pass on its own (<7 mm), strain urine, extracorporeal shock wave lithotripsy (ESWL) if proximal, ureteroscopy + stents if distal, percutaneous nephrolithotomy (most invasive; for > 10 mm stones)
Nephrotic Syndrome	Applying Basic Scientific Concepts	Kidney disease characterized by proteinuria (>3.5 g/day), hypoalbuminemia, hyperlipidemia, & edema. Etiologies: Primary (idiopathic): confined to the kidneys- Minimal change disease, Focal Segmental Glomerulosclerosis (FSGS), Membranous Nephropathy. Secondary causes: systemic disorders that affect other organs in addition to the kidneys (ex. DM = MC overall cause in adults, SLE, amyloidosis, hepatitis, Sjogren's, sarcoid, meds, infxn, malignancy)
Nephrotic Syndrome	Using Diagnostic and Laboratory Studies	1. 24 Hr. Urine Protein Collection = Gold Standard (> 3.5 g/day = nephrotic syndrome) 2. Urinalysis (UA): proteinuria (3+ or 4+ on dipstick). Oval fat bodies; "maltese cross shaped" seen with polarized light microscopy. 3. Hypoalbuminemia (< 3.4 g/dL), hyperlipidemia, +/- increased BUN/Cr 4. Renal Biopsy: may differentiate the types. Usually not needed if minimal change is suspected.
Nongonococcal Urethritis	Using Diagnostic and Laboratory Studies	Nucleic acid amplification = most sensitive & specific for both chlamydia and gonorrhea.
Paraphimosis	Formulating the Most Likely Diagnosis	foreskin becomes trapped behind the corona of the glans and forms a tight band, constricting penile tissues.
Paraphimosis	Clinical Intervention	Urologic Emergency! 1. Manual reduction, cool compresses. 2. Pharm: granulated sugar, injection of hyaluronidase. 3. Incision (ex. dorsal slit)
Peyronie	Formulating the Most Likely Diagnosis	Fibrous scar tissue inside the penis that causes curved, painful erections. Pt. may complain of prevention from having sex or difficulty arriving at or maintaining an erection. For many men, it causes stress/anxiety.

PROBLEM	TASK CATEGORY	ANSWER
Peyronie	Applying Basic Scientific Concepts	associated with Vit. E deficiency, BB's, increased serotonin levels; Dupuytren Contractures & w/ HLA-B7; vascular trauma or injury to penis; associated with erectile dysfunction. RF's: age, obesity, smoking, DM, dyslipidemia, psych issues.
Peyronie	Clinical Intervention	Try Vit E and potassium aminobenzoate (PABA); colchicine; injection (collagenase clostridium histolyticum), surgery
Peyronie's Disease, Sexual Dysfunction	History Taking and Performing Physical Exam	Ask about any history of vascular trauma or injury to penis; any erectile dysfunction? Dupuytren contractures? Any hx of psych issues, smoking, obesity, DM, dyslipidemia? Any penile pain? PE: angulation, curvature of penis, palpable plaque
Phimosis	Formulating the Most Likely Diagnosis	inability to retract foreskin over the glans. Not emergent.
Phimosis	Clinical Intervention	Circumcision
Polycystic Kidney Disease	Applying Basic Scientific Concepts	Autosomal dominant disorder due to mutations of either PKD1 or PKD2 genes. Formation of kidney cysts & cysts in other organs (ex. liver, spleen, pancreas) --> ESRD over time.
Polycystic Kidney Disease	Formulating the Most Likely Diagnosis	Abdominal/flank pain, palpable flank mass (palpable large kidneys on physical exam), HTN, hematuria; Extrarenal: cerebral "berry" aneurysms, hepatic cysts, MVP, colonic diverticula.
Polycystic Kidney Disease	Using Diagnostic and Laboratory Studies	1. Renal Ultrasound: most widely used 1st line diagnostic test. Genetic testing also done. 2. CT/MRI: more sensitive
Polycystic Kidney Disease	Pharmaceutical Therapeutics 02	1. Simple cyst: observation, periodic reevaluation. ACEI for HTN 2. Multiple cysts: supportive, increase fluid intake (fluids decrease vasopressin), control HTN (ACEI). +/- Need dialysis or renal transplant.
Postoperative Hypovolemia	Clinical Intervention	IV fluids or blood products depending on patient's physiologic reserves
Premature Ejaculation	Pharmaceutical Therapeutics	1. Topical desensitizing agents (ex. lidocaine, benzocaine, prilocaine) 2. SSRI's (ex. Sertraline, Paroxetine, fluoxetine, citalopram); Dapoxetine 3. PDE-5 inhibitor (ex. Sildenafil, Tadalafil) Others: pindolol, tramadol
Priapism	Formulating the Most Likely Diagnosis	prolonged, painful erections. Penis remains erect for hrs. in the absence of stimulation
Priapism	Applying Basic Scientific Concepts	1. Ischemic (Low-Flow)- MC: decreased venous outflow; 2. Nonischemic (High-Flow): increased arterial inflow (usually due to perineal or penile trauma)
Priapism	Clinical Intervention	Low-Flow (Ischemic): 1. Phenylephrine (intracavernous injection) = 1st line med. 2. Terbutaline (PO or SQ) - may be used if <4hrs. 3. Needle Aspiration to remove blood (esp. if >4 hrs. duration) +/- phenylephrine and ice packs. 4. Shunt surgery if not responsive to medical and aspiration txs. High-Flow: observation (since it's not ischemic)
Prostatitis	Pharmaceutical Therapeutics	1. Acute Prostatitis: > 35 YO: FQ or TMP-SMX x 4-6 weeks (outpt). If hospitalized: IV FQ +/- Aminoglycoside or ampicillin +/- Gentamicin; <35 YO: Ceftriaxone + Doxycycline (or Azithromycin) 2. Chronic Prostatitis: FQ, TMP-SMX x 6-12 weeks. TURP if refractory chronic prostatitis
Pyelonephritis	Using Diagnostic and Laboratory Studies	1. UA: pyuria (>5 WBC/hpf [esp>10]), (+) leukocyte esterase; WBC casts = pyelonephritis; (+) Nitrites, +/- cloudy urine, bacteriuria 2. Dipstick: (+) leukocyte esterase, nitrites, hematuria 3. Urine Culture = definitive
Pyelonephritis	Clinical Intervention	FQ (PO or IV), Aminoglycosides (ex. Gent), TMP-SMX, Cephalosporin Admit for IV fluids + IV abx if severe or complicated pt.

PROBLEM	TASK CATEGORY	ANSWER
Pyelonephritis	Pharmaceutical Therapeutics	FQ (PO or IV), Aminoglycosides (ex. Gent), TMP-SMX, Cephalosporin Admit for IV fluids + IV abx if severe or complicated pt.
Pyelonephritis	Formulating the Most Likely Diagnosis	fever & tachycardia, back/flank pain, (+) CVA tenderness, N/V; WBC casts on UA; pyuria, (+) leukocyte esterase, nitrites, hematuria
Renal Calculi	Pharmaceutical Therapeutics	pain control (NSAIDs > opioids). Consider antiemetics. With large stones, consider alpha blocker (tamsulosin)
Renal Cell Carcinoma	Applying Basic Scientific Concepts	95% of tumors originating in the kidney. RF's: smoking, dialysis, HTN, obesity, men.
Renal Cell Carcinoma	Formulating the Most Likely Diagnosis	Classic Triad: 1. hematuria, 2. flank/abdominal pain, 3. palpable mass; others: malaise, wt. loss. L-sided varicocele; HTN and hypercalcemia common.
Renal Cell Carcinoma	Using Diagnostic and Laboratory Studies	CT scan usually 1st test. Renal US, MRI
Renal Cell Carcinoma	Clinical Intervention	Stage I-III: radical nephrectomy, immune therapy (interleukin-2); renal cell cancer usually resistant to chemo/radiation. Bilateral involvement or pt. w/ solitary kidney: partial nephrectomy.
Renal Cell Carcinoma	Applying Basic Scientific Concepts	95% of tumors originating in the kidney. Tumor of the proximal convoluted renal tubule cells. Characterized by lack of warning signs, variable presentations, & resistance to chemo/radiation. RF's: smoking, dialysis, HTN, obesity, men.
Renal Cell Carcinoma	Formulating the Most Likely Diagnosis	Triad: 1. hematuria, 2. flank/abdominal pain, 3. palpable mass. Malaise, wt. loss. L-sided varicocele in older male. HTN and Hypercalcemia are common
Renal Cell Carcinoma	Using Diagnostic and Laboratory Studies	CT scan usually 1st test. Renal US, MRI
Renal Cell Carcinoma	Clinical Intervention	Stage I-III: radical nephrectomy. Usually resistant to chemo/radiation. Bilateral or pt with solitary kidney --> partial nephrectomy
Renal Failure	Using Diagnostic and Laboratory Studies	Urine analysis (UA) = most important noninvasive test regarding the etiologies --> casts; Check urine sodium, FeNa, BUN/Cr, response to volume replacement.
Respiratory Alkalosis	Using Diagnostic and Laboratory Studies	Increased pH, Decreased PCO2 --> result of anything that causes hyperventilation
Scrotal Examination, Normal Findings	History Taking and Performing Physical Exam	Normal findings: each testicle feels firm but not hard. Surface is smooth, no lumps or bumps. Spongy, tube/rope shape structure felt on top & down the back side of each testicle (epididymis). Hx: Hx of cryptorchidism? Painless nodule, solid mass, dull pain, or testicular heaviness? Abdominal mass, hemoptysis, bone pain (metastatic dz) PE: look for swelling. Hold penis out of the way and examine scrotum. Examine each testicle using both hands, place your index finger and middle finger under the testicle and your thumbs on top. Gently roll the testicle b/w your thumbs and fingers.
Testicular Mass	Clinical Intervention	scrotal examination, transillumination, then scrotal US and serum studies (alpha fetoprotein, HCG, LDH) if concerning for neoplasm.
Torsion, testicular appendix	Formulating the Most Likely Diagnosis	abrupt onset of scrotal, inguinal or lower abdominal pain (usually < 6hrs), +/- N/V. Swollen/tender/retracted (high-riding) testicle +/- horizontal lie. Negative Prehn's sign (no pain relief with scrotal elevation). Negative (absent) cremaster reflex. "Blue dot sign"
Undescended Testicle	History Taking and Performing Physical Exam	Hx: born premature, low birth weight; any difficulties with subfertility; any hx of testicular torsion or inguinal hernias PE: examine the scrotum; check for inguinal hernia or testicular torsion
Ureteral Spasm	Formulating the Most Likely Diagnosis	urgency, frequency, small volume voids, nocturia; urine leakage accompanied by or preceded by urge.

PROBLEM	TASK CATEGORY	ANSWER
Ureterolithiasis	Health Maintenance, Patient Education, and Preventative Measures	drink more fluids (2+ L/day) to increase the amount of urine to lower the concentration of substances that promote stone formation. Diet changes dependent on the type of kidney stone (ex. decrease protein intake)
Urge Incontinence	Formulating the Most Likely Diagnosis	urine leakage accompanied by or preceded by the urge. Urgency, frequency, small volume voids, nocturia; "overactive bladder"
Urinary Incontinence	Health Maintenance, Patient Education, and Preventative Measures	Bladder training (timed frequent voids, decrease fluid intake); Pelvic floor exercises (Kegel exercises, biofeedback)
Urinary Retention	Using Diagnostic and Laboratory Studies	A post-void residual; Ultrasound the bladder; if do to BPH, do a DRE +/- check PSA.
Urinary Tract Infection (UTI)	Applying Basic Scientific Concepts	RF's: sexual intercourse, "honeymoon cystitis", spermicidal use (esp. w/ diaphragm), pregnancy, postmenopausal; Rare for males to get UTI's; If child/neonate--> suspect Vesicoureteral Reflux (VUR); DM, catheters; E. coli = MC; usually ascending infxn.
Urinary Tract Infection (UTI)	History Taking and Performing Physical Exam	dysuria (burning), increased frequency, urgency, hematuria, suprapubic discomfort, pyuria, (+) leukocyte esterase, nitrites
Urinary Tract Infection (UTI)	Using Diagnostic and Laboratory Studies	1. UA: pyuria, leukocyte esterase, nitrites, hematuria +/- cloudy urine, bacteriuria 2. Dipstick: leukocyte esterase, nitrites, hematuria, WBC's 3. Urine culture = definitive
Urinary Tract Infection (UTI)	Health Maintenance, Patient Education, and Preventative Measures	increase fluid intake, void after intercourse, Phenazopyridine (Pyridium) turns urine orange/not used more than 48 hours due to SE (methemoglobinuria, hemolytic anemia)
Varicocele	Formulating the Most Likely Diagnosis	"bag of worms" superior to the testicle. Usually painless +/- dull ache/heavy sensation. Dilation decreases if supine or with testicular elevation. Worsens when upright or with valsalva.
Varicocele	Applying Basic Scientific Concepts	cystic testicular mass of varicose veins. MC on L-side b/c left spermatic vein enters the left renal vein at 90 degree angle. Most common surgically correctable cause of infertility in men.
Varicocele	History Taking and Performing Physical Exam	Possible hx w/ difficulty reproducing (infertility). Any hx of dull aching/heavy sensation; Ask if it's worse when upright or with Valsalva/relieved when supine or with testicular elevation. Ask about any family hx of cancer. PE: palpate the testicle; have patient perform Valsalva maneuver; elevate the testicle
Varicocele	Health Maintenance, Patient Education, and Preventative Measures	Dilation decreases if supine or with testicular elevation. Worsens when upright or with Valsalva. Sudden onset of L-sided varicocele in older man --> suspect renal cell carcinoma. R-sided varicocele in children < 10 YO --> possible retroperitoneal malignancy.
Varicocele	Clinical Intervention	Observe most. Surgery (spermatic vein ligation, varicocelectomy)
Vesicoureteral Reflux (VUR)	Formulating the Most Likely Diagnosis	retrograde regurgitation of urine from bladder up the ureter and into the collecting system of the kidneys. Causes UTI's or fever + kidney infxn. Suspect VUR in children/neonate with a UTI or with a fever of unknown origin.
Wilms Tumor (Nephroblastoma)	Applying Basic Scientific Concepts	MC in children within the first 5 years of life. MC abdominal malignancy in children. Associated with other GU abnormalities (ex. Cryptorchidism, hypospadias, horseshoe kidney). Lung = common site for METS.
Wilms Tumor (Nephroblastoma)	Formulating the Most Likely Diagnosis	Painless palpable abdominal mass = MC (does not cross midline). Hematuria, HTN, anemia
Wilms Tumor (Nephroblastoma)	Using Diagnostic and Laboratory Studies	Abdominal ultrasound = best initial test. CT w/ contrast or MRI is more accurate.
Wilms Tumor (Nephroblastoma)	Clinical Intervention	1. Nephrectomy followed by chemotherapy. 2. Post surgery radiation therapy if extends beyond renal capsule, pulmonary METS or large tumor.

PROBLEM	TASK CATEGORY	ANSWER
NEUROLOGY		
Abdominal pain	History Taking and Performing Physical Exam	Hx of any previous abdominal surgeries, constipation, bowel habits, last bowel movement. Any hx of potentially eating foods that could cause diarrhea; hx of drinking from remote streams/wells; menstrual hx; medication hx, etc. PE: perform thorough abdominal exam
Acute Delirium	Pharmaceutical Therapeutics	antipsychotic meds (ex. Risperidone, Olanzapine, Quetiapine). Benzos for alcohol & benzo withdrawal states (ex. Lorazepam) + give Thiamine and B12.
Akathisia	Pharmaceutical Therapeutics	Antihistamine. Stop enticing medicine. Maybe beta blocker.
Alzheimer	Using Diagnostic and Laboratory Studies	Dx of exclusion. Rule out other causes. Cognitive testing.
AML	Formulating the Most Likely Diagnosis	Bone marrow: Auer Rods & >20% blasts. MC acute leukemia in adults > 50 YO. Pancytopenia, splenomegaly, gingival hyperplasia, leukocytosis (WBC > 100,000), bone pain.
Amyotrophic Lateral Sclerosis (ALS)	Formulating the Most Likely Diagnosis	off balance, instability, weakness in upper extremities, fasciculations, +/- atrophy. Associated with military, air force, and athletes. Sensation, urinary sphincter, and voluntary eye movements are spared. Loss of ability to initiate/control motor movements. Mixed upper & lower motor neuron signs.
Basilar Skull Fracture	History Taking and Performing Physical Exam	Hx of blunt trauma. On PE look for signs of trauma, hematomas, bruising behind the ears, bruising around the eyes, or blood behind the ear drum. Assess for any CSF fluid leaking from the nose or ear.
Bell Palsy	Health Maintenance, Patient Education, & Preventative Measures	can be associated with reactivation of HSV or Lyme Disease. May recur. MC on R-side. Function returns in 2 weeks with significant improvement within 4 weeks with or without tx. Taste improves before motor recovery. May want to tape eye shut at night; eye drops.
Bell Palsy	Pharmaceutical Therapeutics	1. Prednisone (esp if started in first 72 hours of sx onset). 2. Artificial tears, +/- eye patch, tape eye shut to sleep. 3. Acyclovir in severe cases.
C5 Nerve Root, Normal Function	Applying Basic Scientific Concepts	C5 controls the deltoids and the biceps. The C5 dermatome covers the outer part of the upper arm down to about the elbow.
Cervical Radiculopathy	Formulating the Most Likely Diagnosis	pain, weakness, numbness, or difficulty controlling specific muscles. Exacerbated with head movement.
CN III Disorder	History Taking and Performing Physical Exam	oculomotor nerve. PE: inferior rectus, ciliary body. Abnormalities: oculomotor, dilated pupil.
Complex Regional Pain Syndrome	Formulating the Most Likely Diagnosis	pain out of proportion to exam, but with physical exam findings such as skin changes (like a really painful focal Raynaud's disease). Psychiatric history.
Complex Regional Pain Syndrome	Clinical Intervention	Early mobilization after injury, NSAIDs. PT/OT. Pain: amitriptyline, nortriptyline, gabapentin, lamotrigine; calcitonin as adjunct. Tx failure --> try bisphosphonates, IVIG, regional nerve block, dorsal column stimulation +/- behavior management therapy. Vit C prophylaxis after fractures may decrease incidence.
Cranial nerve III palsy	Formulating the Most Likely Diagnosis	damage results in pt being unable to move their eye normally. In addition, the nerve also supplies the upper eyelid muscle (levator palpebrae superioris) and the muscles responsible for pupil constriction (sphincter pupillae)
Critical Illness Polyneuropathy	Formulating the Most Likely Diagnosis	Syndromes of diffuse, symmetric, flaccid muscle weakness occurring in critically ill patients and involving all extremities and the diaphragm with relative sparing of the cranial nerves.
Dementia, Adverse drug effect	Pharmaceutical Therapeutics	Want to avoid anticholinergics, opiates, and benzos
Dementia, Alzheimer disease	Health Maintenance, Patient Education, & Preventative Measures	Keep patient on a consistent schedule, write small reminders, engage in activities that help the patient think (ex. reading, crossword puzzles, etc.), keep a clock around to help patient stay oriented to time, label meds, etc. Advise pt not to cook when home alone. Maintain a regular sleep/wake schedule. Pt may need around the clock care/supervision as disease progresses.

PROBLEM	TASK CATEGORY	ANSWER
Encephalopathy, Bovine Spongiform	Applying Basic Scientific Concepts	Mad cow disease via consumption of infected cattle meat. Transmitted to humans via a prion (protein). Rapid mental deterioration within few months --> coma. Difference b/w encephalopathy & meningitis - AMS (viral encephalopathy has AMS); spread to human--> variant Creutzfeldt-Jakob disease.
Epidural Hematoma	Formulating the Most Likely Diagnosis	temporal injury (MC temporal skull fracture). Unresponsive, then alert, then unresponsive. CT shows convex (lens-shaped) bleed that does not cross suture lines.
Epilepsy, generalized convulsive	History Taking and Performing Physical Exam	loss of consciousness, rigidity, sudden arrest of respiration, repetitive/rhythmic jerking lasting <2-3 min); flaccid coma/sleep; may be accompanied by incontinence, tongue biting, or aspiration with postictal confusion. Auras are pre-warnings to seizures.
Epilepsy, Simple Partial	Formulating the Most Likely Diagnosis	consciousness fully maintained. EEG shows focal discharge at the onset of the seizure. May be followed by transient neurologic deficit (Todd's paralysis) lasting up to 24 hrs.
GC Meningitis	Health Maintenance, Patient Education, & Preventative Measures	vaccine (in pts > 55YO & high risk pts ex. asplenia); tx close contacts- if you're around someone w/ GC, you are treated w/ Ciprofloxacin 500 mg PO x 1 dose or Rifampin 600 mg PO q12 hrs x 2 days.
Guillain-Barre Syndrome	Formulating the Most Likely Diagnosis	"GBS"- ground to brain symptoms (ascending weakness); usually symmetric. Sometimes caused by campylobacter jejuni or a preceding respiratory or GI infxn. Decreased DTR's (LMN lesion); breathing difficulties
Guillain-Barre Syndrome	History Taking and Performing Physical Exam	Hx of infxn w/ campylobacter or a preceding respiratory or GI infxn. PE: ascending weakness; usually symmetric. Decreased DTR's; breathing difficulties.
Guillain-Barre Syndrome	Clinical Intervention	1. Plasmapheresis best if done early. 2. Intravenous Immune Globulin (IVIG) equally as effective as plasmapheresis. 3. Mechanical ventilation if respiratory failure. Prednisone is contraindicated.
Headache	History Taking and Performing Physical Exam	sudden (SAH) or gradual; chronic (migraines); fever (meningitis); nuchal rigidity (SAH or meningitis); males w/ unilateral lancing pain and Horner's-like syndrome (cluster).
Headache, Postdural puncture	History Taking and Performing Physical Exam	Diagnostic hallmark: postural HA that worsens with sitting/standing and improves when supine. Pressure issue.
Headache, Postdural puncture	Clinical Intervention	Bed rest, hydration, caffeine; epidural blood patch (HA gone in seconds) if conservative management fails.
Huntington Disease	Applying Basic Scientific Concepts	autosomal dominant neurodegenerative disorder; mutation of chromosome 4; decreased GABA & substance P.
Huntington Disease	Formulating the Most Likely Diagnosis	Sxs usually appear 30-50YO. Initially behavioral changes then chorea and then development of dementia usually before 50 YO. Brisk DTR's; gait abnormalities/ ataxia/unsteadiness.
Huntington Disease	Using Diagnostic and Laboratory Studies	CT Scan: cerebral and caudate nucleus atrophy. MRI shows similar findings; genetic testing; PET scan: decreased glucose metabolism in caudate nucleus and putamen.
Huntington Disease	Health Maintenance, Patient Education, & Preventative Measures	No cure. Usually fatal within 15-20 years of presentation. Chorea management with antidopaminergics - typical & atypical antipsychotics, tetrabenazine. Benzos for sleep & chorea. No med stops disease progression.
Lateral Medullary (Wallenberg) Syndrome	Using Diagnostic and Laboratory Studies	head impulsive, nystagmus, test of skew (HINTS) examination of oculomotor function is often performed, along with CT or MRI to assist in stroke detection.
Lesion, brain (basal ganglion)	Formulating the Most Likely Diagnosis	problems with speech, movement, and posture; "parkinsonism"
Lesion, brain (cerebellum)	Applying Basic Scientific Concepts	causes dyssynergia, dysmetria, dysarthria, and ataxia of stance & gait; on same side of body as the lesion (ipsilateral)
Meningioma, cerebral	Using Diagnostic and Laboratory Studies	CT scan or MRI with contrast: intensely enhancing, well-defined lesion often attached to the dura. Brain biopsy usually guided by imaging studies.

PROBLEM	TASK CATEGORY	ANSWER
Meningitis, bacterial, acute	Pharmaceutical Therapeutics	< 1 month: Ampicillin + Cefotaxime or Aminoglycoside. 1 month-50 YO: Ceftriaxone (or Cefotaxime) + Vancomycin. > 50 YO: Ampicillin + Ceftriaxone (or Cefotaxime) +/- Vancomycin. Dexamethasone recommended if known or suspected streptococcus pneumoniae (also in children if due to Hib to reduce hearing loss). Post-exposure prophylaxis: Ciprofloxacin or Rifampin
Meningococcal Meningitis	Health Maintenance, Patient Education, & Preventative Measures	vaccine (in pts > 55YO & high risk pts ex. asplenia); tx close contacts- if you're around someone w/ GC, you are treated w/ Ciprofloxacin 500 mg PO x 1 dose or Rifampin 600 mg PO q12 hrs x 2 days.
Meningococcal Meningitis	Using Diagnostic and Laboratory Studies	caused by Neisseria meningitidis (gram - diplococci). Positive Kernig's/Brudzinski's sign; Head CT scan to r/o mass --> LP
Migraine	Formulating the Most Likely Diagnosis	lateralized, pulsatile/throbbing headache associated with N/V, photophobia & phonophobia usually lasts 4-72 hours. May be bilateral. Worse with physical activity, stress, lack/excessive sleep, ETOH, specific foods (ex. chocolate, red wine), OCPs/ menstruation. Auras often present prior to headache onset: visual changes MC (ex. light flashes (photopsia), scotomas (blind spots); numbness, weakness.
Migraine	Pharmaceutical Therapeutics	1. Symptomatic (abortive): triptans or ergotamine, dopamine blockers (ex. Metoclopramide, promethazine, prochlorperazine) often given with diphenhydramine to prevent EPS, IV fluids & place pt in dark/quiet room; Mild sxs: NSAIDs/acetaminophen 1st line. Caffeine may help. 2. Prophylactic: anti-HTN meds (BB, CCB), TCAs, anticonvulsants (valproate, topiramate), NSAID
Multiple Sclerosis	Applying Basic Scientific Concepts	autoimmune, inflammatory demyelinating disease of the CNS. Axon degeneration of white matter of the brain, optic nerve & spinal cord. Three types: relapsing-remitting dz (MC), progressive, and secondary progressive.
Multiple Sclerosis	Formulating the Most Likely Diagnosis	Sensory deficits (pain, fatigue, numbness/paresthesia in limbs; trigeminal neuralgia; sxs worse w/ heat, exercise, hot tubs (Uhthoff's phenomenon); neck flexion causes lightning-shock pain from spine down the leg (Lhermitte's sign); Optic neuritis (unilateral eye pain worse w/ movement); vision loss (esp. color); Marcus-Gunn pupil; Upper motor neuron = spasticity & (+) upward Babinski.
Multiple Sclerosis	Using Diagnostic and Laboratory Studies	Mainly a clinical dx - at least 2 discrete episodes of exacerbations. 1. MRI w/ Gadolinium = test of choice to help confirm MS- white matter plaques (hyperdensities) = hallmark. Proof of at least 2 areas of white matter involvement. 2. Lumbar puncture: Increased IgG (oligoclonal bands) in CSF
Multiple Sclerosis	Pharmaceutical Therapeutics	1. Acute Exacerbations: IV high-dose corticosteroids = 1st line. Plasmapheresis if refractory. 2. Relapsing-Remitting/Progressive Dz: Beta-interferon or glatiramer acetate (copaxone) to decrease #/severity of relapses. Amantadine for fatigue. Baclofen & Diazepam for spasticity.
Myasthenia Gravis	Applying Basic Scientific Concepts	strongest in the morning; weakest in the evening. Autoimmune disorder of peripheral nerves. Inefficient skeletal muscle neuromuscular transmission due to autoimmune antibodies against acetylcholine (nicotinic) post-synaptic receptors @ the neuromuscular junction (decreased Ach receptors). 75% have thymic abnormality (hyperplasia or thymoma). Common in young women. Can occur post-partum. Refer to neurology.
Myasthenia Gravis	Using Diagnostic and Laboratory Studies	AChR-Ab, MuSK Ab assays; EMG; Edrophonium (Tensilon) Test: rapid response to short-acting IV edrophonium. Ice pack test: ocular MG is improved when ice pack is placed on eye for 10 min (ptosis improved). CT scan or MRI of chest may show thymoma.
Myasthenia Gravis	Pharmaceutical Therapeutics	1. Acetylcholinesterase Inhibitors: Pyridostigmine or Neostigmine = 1st line. 2. Immunosuppression: Plasmapheresis or IVIG used in myasthenia crisis for rapid response. Chronic immunosuppression with corticosteroids; azathioprine or cyclosporine as steroid alternatives. 3. Thymectomy if thymoma. Avoid FQ's or aminoglycosides.

PROBLEM	TASK CATEGORY	ANSWER
Myasthenia Gravis	Clinical Intervention	Thymectomy if thymoma.
Neoplasm, brain	Applying Basic Scientific Concepts	Glioblastoma: MC and most aggressive of all the primary CNS tumors in adults. Focal deficits most common; frontal lobe: dementia, personality changes, gait abnormalities, expressive aphasia, seizures. Temporal lobe: partial complex & generalized seizures. Parietal lobe: receptive aphasia, contralateral sensory loss, hemianopia, spatial disorientation. Occipital lobe: contralateral homonymous hemianopia. Thalamus: contralateral sensory loss. Brainstem: papillary changes, nystagmus, hemiparesis. Increased intracranial pressure leads to headache, nausea, vomiting, papilledema, ataxia, drowsiness, stupor.
Nerve Disorder, Oculomotor	History Taking and Performing Physical Exam	oculomotor CN III. Physical exam: EOM's. control all EOM's except lateral rectus and superior oblique. PE: inferior rectus, ciliary body (abnormality would show issues with EOM's and have a dilated pupil).
Nerve injury, median	Applying Basic Scientific Concepts	Aka carpal tunnel syndrome; worse at night; palmar aspect of thumb, pointer, and middle finger; increased incidence with DM. Thenar muscle wasting if advanced.
Nerve injury, median	Formulating the Most Likely Diagnosis	entrapment/compression at the carpal tunnel. Paresthesia & pain of the palmar first 3 digits especially at night.
Nerve injury, peroneal	History Taking and Performing Physical Exam	Provides sensation to the lateral leg. Innervated the peroneus longus, peroneus brevis, and the short head of the biceps femoris muscles. Injuries can lead to foot drop.
Neurogenic Shock	Applying Basic Scientific Concepts	a type of distributive shock: maldistribution of blood flow from essential organs to nonessential organs. Excess vasodilation & altered distribution of blood flow (increased venous capacity) with shunting of blood flow from vital organs (ex. heart, kidneys) to non-vital tissues (ex. skin, skeletal muscle). Hallmark: decreased CO, decreased SVR, decreased PCWP. Neurogenic shock is due to acute spinal cord injury or regional anesthesia. Autonomic sympathetic blockade --> unopposed increased vagal tone --> bradycardia & hypotension. Warm, dry skin, normal or decreased HR, wide pulse pressure.
Neuropathy, ulnar nerve	History Taking and Performing Physical Exam	Ask about any pain, numbness or weakness in the little finger/ulnar half of the ring finger. Worse with elbow flexion. PE: (+) Tinel's sign at the elbow; (+) Froment's sign -holds paper & compensates with flexion of IP joint - pinching effect.
Normal function, vagus nerve	History Taking and Performing Physical Exam	CN X (10). Motor: voice, soft palate, gag reflex. Sensory: relays to the brain sensory information about organs (ex. GI, pulmonary heart).
Parkinson Disease	Clinical Intervention	Exercise programs recommended. Levodopa/Carbidopa = most effective tx; Dopamine agonists (bromocriptine, pramipexole, ropinirole) have less SE's than levodopa; used in young pt to delay use of levodopa. Anticholinergics: ex. Benztropine in < 70 YO w/ tremor predominance. Amantadine, Selective MAO-B Inhibitors (selegiline, rasagiline), COMT Inhibitors (entacapone)
Post concussion Syndrome	Clinical Intervention	Cognitive and physical rest is the main management of patients with concussion. Patients may resume strenuous activity after resolution of sxs & recovery of memory & cognitive functions.
Restless Leg Syndrome	Clinical Intervention	If RLS is not linked to an underlying cause, its frequency may be reduced by lifestyle mods such as improve sleep hygiene, regular exercise, and stop smoking. Meds may include dopamine agonists or gabapentin.
Restless Leg Syndrome	Pharmaceutical Therapeutics	1. Dopamine Agonists = TOC (ex. Pramipexole, Ropinirole). 2. Alpha-2-delta calcium channel ligands (ex. gabapentin, pregabalin) 3. Benzos as adjunct (ex. clonazepam) 4. Opioids in disease resistant cases. 5. Iron supplement in pts with serum ferritin < 75 mcgL
Seizure Disorder	Health Maintenance, Patient Education, & Preventative Measures	Can't drive unless balance on meds (seizure-free) for a period of 2 years. Bupropion (Wellbutrin) lowers seizure threshold. Tdap= can't give to kids w/ seizure disorder. Avoid ETOH, nicotine; get good sleep; decrease stress

PROBLEM	TASK CATEGORY	ANSWER
Stroke	History Taking and Performing Physical Exam	Hx: of previous thrombotic events, emboli; any hx of stasis, damage, or hypercoagulability. Hx of HTN, HA, vomiting, impaired consciousness, ataxia, aphasia, neglect to one side of body, impaired speech, personality changes, confusion, hallucinations, double vision, etc. PE: look for hemiparesis, hemiplegia, gait ataxia, check vision, check for hemianopsia, urinary incontinence, drop attacks, vertigo, nystagmus, diplopia, meningeal irritation/nuchal rigidity, focal neurologic sxs, etc.
Subarachnoid hemorrhage (SAH)	Formulating the Most Likely Diagnosis	sudden onset of HA - "thunderclap" HA; "worst HA of my life"
Subarachnoid hemorrhage (SAH)	Using Diagnostic and Laboratory Studies	CT is first line. If negative, then an LP looking for blood or xanthochromia. 4-vessel angiography after confirmed SAH.
Subarachnoid hemorrhage (SAH)	Clinical Intervention	Send to/refer to interventional neurology for surgical coiling or clipping.
Subarachnoid hemorrhage (SAH)	Pharmaceutical Therapeutics	Nimodipine, Nicardipine, Labetalol to lower BP. Supportive: bed rest, stool softeners. Decrease ICP: mannitol, hyperventilation, head elevation +/- shunt
Subdural Hematoma	Using Diagnostic and Laboratory Studies	CT: concave (crescent-shaped) bleed; bleeding can cross suture lines.
Suprascapular nerve entrapment	Formulating the Most Likely Diagnosis	The suprascapular nerve is a mixed (motor and sensory) nerve that supplies the supraspinatus and infraspinatus muscles (part of rotator cuff muscles). Injury can be from trauma, rotator cuff tears, fractures of the scapula or clavicle, dislocation of the shoulder, gunshot/stab injuries to shoulder, or an injury that results in stretching of the nerve. Compression of the nerve can be caused by tumors or ganglion cysts, thickened or calcified suprascapular ligament, congenital structural changes of the scapular bone. Pt will present with shoulder/arm weakness or heaviness, radiating/ burning pain to the neck/back/or arm, pain that worsens with shoulder movement, loss of shoulder function; atrophy, wasting or shrinking of upper shoulder muscles.
Tardive Dyskinesia	Pharmaceutical Therapeutics	Clonazepam, valbenazine (ingrezza), deutetrabenazine (austedo). Clozapine is a good drug if pt has tardive dyskinesia but requires antipsychotic tx (ex. for schizophrenia).
Transient Ischemic Attack (TIA)	Applying Basic Scientific Concepts	transient episode of neurological deficits caused by focal brain, spinal cord, or retinal ischemia without acute infarction. Often lasting <24 hours- most resolve in 30-60 min. MC due to embolus (ex. heart, carotid, vertebrobasilar) or transient hypotension. 50% of pts with TIA will have a CVA within 1st 24-48 hours afterwards (esp if DM, HTN). 10-20% will experience CVA within 90 days.
Transient Ischemic Attack (TIA)	Using Diagnostic and Laboratory Studies	CT scan of head = initial test of choice to rule out intracranial hemorrhage. Carotid doppler; CT angiography, MRA. Blood glucose to rule out hypoglycemia, rule out electrolyte abnormalities, coagulation studies, CBC. Echocardiogram (TTE or TEE) to look for embolic sources. EKG to look for a-fib. ABCD2 score to assess CVA risk.
Trigeminal neuralgia (tic douloureux)	Pharmaceutical Therapeutics	Carbamazepine (Tegretol) 1st line. Oxcarbazepine. Gabapentin (Neurontin), Baclofen.
Trigeminal Neuralgia	Formulating the Most Likely Diagnosis	CN5; associated with MS; sharp burning pain that radiates from mouth towards ear. Pain is intermittent, excruciating, lasting a few seconds and is worse with eating or touching face.
Trigeminal Neuralgia	History Taking and Performing Physical Exam	Hx: brief, episodic, stabbing/lancinating pain in the 2nd/3rd division of trigeminal nerve (CN5), lasting seconds-mins; worse with touch, eating, drafts of wind, and movement; any hx of MS? PE: usually unilateral; pain starts near mouth and shoots to the eye, ear, & nostril on the ipsilateral side.
Trigeminal Neuralgia	Pharmaceutical Therapeutics	Carbamazepine (Tegretol) 1st line. Oxcarbazepine. Gabapentin (Neurontin), Baclofen.
Tumor Lysis Syndrome	Formulating the Most Likely Diagnosis	complication of induction treatment w/ chemo in AML pts. 48-72 hours after induction tx, large # of cells being destroyed --> hyperuricemia, hypocalcemia, hyperkalemia, hyperphosphatemia, acute renal failure

PROBLEM	TASK CATEGORY	ANSWER
Tumor Lysis Syndrome	Pharmaceutical Therapeutics	Allopurinol, IV fluids
Ulnar Nerve Entrapment	Formulating the Most Likely Diagnosis	pain, numbness, or weakness in the little finger, ulnar half of the ring finer and intrinsic muscles.
Upper Motor Neuron Lesions	History Taking and Performing Physical Exam	Etiologies: stroke (CVA), multiple sclerosis, cerebral palsy, brain or spinal cord damage (ex. traumatic brain injury). Paralysis: spastic paralysis (hypertonia) with increased DTR's. No fasciculations; Upward Babinski reflex; Little or no muscle atrophy.
Viral Meningitis	Applying Basic Scientific Concepts	Enterovirus MC (ex. coxsackie, echovirus); chemistries: normal glucose, normal/mild increase in proteins, nothing on gram stain (culture negative), lymphocytes predominate; HA, neck stiffness, Brudzinski/Kernig

PROBLEM	TASK CATEGORY	ANSWER
PSYCHIATRY/BEHAVIORAL SCIENCE		
ADHD	History Taking and Performing Physical Exam	difficulty paying attention, controlling behaviors, & hyperactivity. Sx onset before age 12 & present for at least 6 months. Sxs must occur in at least 2 settings (ex. home & school).
ADHD	Pharmaceutical Therapeutics	1. Behavior Modification; 2. Sympathomimetics (stimulants) = TOC [ex. Methylphenidate (Ritalin), Amphetamine/dextroamphetamine (Adderall), Dexmethylphenidate (Focalin)]; 3. Nonstimulants: Atomoxetine (Strattera)- selective norepinephrine reuptake inhibitor (SNRI)
Adverse Effect, Electroconvulsive Therapy	Clinical Intervention	MC side effect = short-term memory loss (retrograde amnesia); increased HR & BP during procedure; HA, nausea, muscle aches/soreness, disorientation and confusion, fatigue. If adverse effects --> stop the procedure???
Agoraphobia	Pharmaceutical Therapeutics	SSRI's, SNRI's; psycotherapy: combo of exposure therapy, relaxation, and breathing training.
Alcohol Dependence, Withdrawal	Pharmaceutical Therapeutics	1. IV benzo. 2. IV fluids & supplementation: IV thiamine & magnesium (prior to glucose), multivitamins (including Vit B12/Folate). IV fluids + Dextrose. 3. Avoid meds that decrease seizure threshold if possible (ex. Bupropion, Haloperidol, anticonvulsants, clonidine, BB)
Alcohol Use Disorder	History Taking and Performing Physical Exam	CAGE screening: >2 is (+): Cut down, Annoyed when people criticize, Guilt, Eye opener/morning drink; Alcohol abuse becomes dependence when withdrawal sxs develop or tolerance.
Anorexia Nervosa	Using Diagnostic and Laboratory Studies	BMI < 17.5 k/m^2...or.. Body weight < 85% of ideal weight. Labs: leukocytosis, leukoenia, anemia, hypokalemia, increased BUN (dehydration), hypothyroidism may show osteopenia/osteoporosis on DEXA scan
Anorexia Nervosa	Clinical Intervention	Medical stabilization (hospitalization for <75% expected weight or complications). Electrolyte imbalance --> cardiac abnormality. Psychotherapy: Cognitive Behavioral Therapy, supervised meals, wt. monitoring. Get primary care and psych follow-up if treating inpatient.
Anorexia Nervosa	Pharmaceutical Therapeutics	if depressed --> SSRI's, atypical antipsychotics. No Buproprion w/ eating disorders and seizures. Calcium & Vit D, estrogen --> for osteopenia
Antisocial Personality Disorder	Formulating Most Likely Diagnosis	> 18 YO; deviating sharply from norms, values, & laws of society; may commit criminal acts without regard to laws; 3x more common in males; lack of empathy, manipulative, deceitful, lacks remorse, lies often, endagers others (ex. drunk driving)
Autism Spectrum Disorder	History Taking and Performing Physical Exam	Difficulties w/ social interaction & communication; restricted & repetitive behavior; avoid eye contact; no response to affection. Poor Development: no response to name (or eye-to-eye gaze) by 6 mo; No babbling by 12 mo; no gesturing (point, wave, etc.) by 12 mo; No single words by 16 mo; No two-word phrases by 24 months. Loss of any language or social skills at any age.
Bipolar Disorder	Using Diagnostic and Laboratory Studies	Bipolar I: > 1 manic or mixed episode which often cycles with occasional depressive episodes (but major depressive episodes are not required for the diagnosis) Bipolar II: > 1 Hypomanic episode + > 1 major depressive episode. Mania or mixed episodes are absent.
Bipolar Disorder	Health Maintenance, Patient Education, & Preventative Measures	Benefits from adding group psychoeducation to pharmacotherapy. Family Hx (1st degree relative) is strongest risk factor. Onset usually 20's-30's (earlier onset = worse prognosis)
Bipolar Disorder	Pharmaceutical Therapeutics	1. Mood Stabilizers: Lithium = 1st line; valproic acid, carbamazepine; 2nd gen antipsychotics (ex. Olanzapine). Haloperidol or Benzo may be added if psychosis or agitation develops. Other txs include: electroconvulsive therapy, MAOI's, SSRI's, & TCA's (however, antidepressant meds may precipitate mania)

PROBLEM	TASK CATEGORY	ANSWER
Brief Psychotic Disorder	Formulating Most Likely Diagnosis	> 1 psychotic sx(s) with onset & remission < 1 month > 1 psychotic sx(s) with onset & remission < 1 month > 1 psychotic sx(s) with onset & remission < 1 month
Bulimia Nervosa	Using Diagnostic and Laboratory Studies	Hypokalemia & Hypomagnesemia; Normal or overweight; Metabolic alkalosis from vomiting.
Bulimia Nervosa	Formulating Most Likely Diagnosis	normal or overweight; binge eating --> compensatory behavior; teeth pitting/enamel erosion; Russell's sign= calluses on dorsum of hand.
Bulimia Nervosa	Clinical Intervention	CBT and Fluoxetine (Prozac)
Cocaine Abuse	Pharmaceutical Therapeutics	Benzo +/- antipsychotics for agitation
Conduct Disorder, Childhood-onset type	Health Maintenance, Patient Education, & Preventative Measures	Poor prognosis. 40% develop antisocial personality disorder. MC in boys.
Depressive Disorder	Applying Basic Scientific Concepts	Persistent Depressive Disorder (Dysthymia): chronic depressed mood > 2 yrs in adults (1 yr in kids/adolescents). Usually more mild than MDD. In that 2 yrs, pt is not sx free for > 2 mo at a time.
Dissociative Fugue	Clinical Intervention	Take to psych for psychotherapy
Domestic Violence	Health Maintenance, Patient Education, & Preventative Measures	Educate patient that he/she can get help. Provide hotline numbers/online chat resources.
Drug overdose, analgesics	Formulating Most Likely Diagnosis	Opioid analgesic overdose encompasses a range of clinical findings: respiratory depression, miosis, stupor, hepatic injury from acetaminophen or hypoxemia, myoglobinuria, rhabdomyolysis, absent or hypoactive bowel sounds, compartment syndrome, hypothermia, etc.
Episodic Insomnia Disorder	Health Maintenance, Patient Education, & Preventative Measures	Encourage/Educate about good sleep hygiene (bed is for sleep & sex only; avoid caffeine late in the day; daily exercise; maintain a regular sleep schedule for bedtime and wakening; avoid naps, etc.)
Illness Anxiety Disorder	Formulating Most Likely Diagnosis	previously termed hypochondriasis. Preoccupation with the fear or belief one has or will contract a serious, undiagnosed disease (despite reassurance and medical workups showing no disease). Sxs lasts > 6 months. Somatic sxs usually not present (or mild); care-seeking type: frequently get tested, "doctor shop"
Insomnia	Health Maintenance, Patient Education, & Preventative Measures	Encourage/educate about good sleep hygiene, relaxation, biofeedback, stimulus control, sleep restriction, cognitive therapy, CBT, phototherapy, chronotherapy. Discourage alcohol at bedtime. Limit screen time before bed.
Major Depressive Disorder	Using Diagnostic and Laboratory Studies	Clinical: depressed mood or anhedonia (loss of pleasure) or loss of interest in activities with > 5 associated sxs almost every day for most days for at least 2 weeks: fatigue, insomnia or hypersomnia, feels of guilt or worthlessness, recurring thoughts of death or suicide, psychomotor agitation, significant wt. gain (gain or loss), decreased or increased appetite, psychomotor agitation, decreased concentration/indecisiveness. The sxs are not due to substance use, bereavement or medical conditions. Absence of mania or hypomania.
Major Depressive Disorder	Clinical Intervention	1. CBT (psychotherapy)
Major Depressive Disorder	Pharmaceutical Therapeutics	SSRI's: use 3-6 weeks to determine efficacy
Narcissistic Personality Disorder	Formulating Most Likely Diagnosis	grandiose often excessive sense of self-importance but needs praise & admiration (fragile self-esteem). MC in males; reacts to rejection/criticism with rage.
Nicotine Dependence, Smoking Cessation	Health Maintenance, Patient Education, & Preventative Measures	1. CBT + OTC gym/nasal spray/patch; 2. Bupropion (Zyban); 3. Varenicline (Chantix); Smoking hotline #'s; Counsel pt.
Obsessive-Compulsive Disorder (OCD)	Formulating Most Likely Diagnosis	anxiety disorder characterized by combination of: 1. obsessions: recurrent or persistent thought/images; thoughts are inappropriate, intrusive, & unwanted. Pt tries to ignore/suppress the obsessions. 2. Compulsions: repetitive behaviors person feels driven to perform.

PROBLEM	TASK CATEGORY	ANSWER
Obsessive-Compulsive Disorder (OCD)	Clinical Intervention	CBT: Exposure & Response Prevention (ERP) --> habituation. Traditional Psychotherapy ("talk therapy") for pts. with insight. Also family support & education. Medication: SSRI (Fluoxetine), SNRI (Venlafaxine)
Overdose	Using Diagnostic and Laboratory Studies	Drug screen, blood alcohol level, acetaminophen level, aspirin level; CBC, CMP, EKG; Consider VBG/ABG/CO-OX if inhalant suspected.
Panic Disorder	Formulating Most Likely Diagnosis	recurrent unexpected panic attacks; an attack followed by a month of persistent concern/worry about another/consequence and/or maladaptive behavior change (avoidance). Not attributable to substance/drug or other medical condition
Panic Disorder	Pharmaceutical Therapeutics	1. Long-term Mgmt.: 1st line = SSRI; CBT to focus on thinking/behavior (ex. relaxation, desensitization, examine behavior consequences). 2. Acute Attacks: Benzos
Postoperative Psychosis	Formulating Most Likely Diagnosis	Pt with a recent hx of surgery that required anesthesia --> psychosis
Postpartum Depression	Pharmaceutical Therapeutics	antidepressants (ex. SSRI); brexanolone (Zulresso)- FDA approved in 2019
Premenstrual Dysphoric Disorder (PMDD)	Applying Basic Scientific Concepts	severe PMS w/ functional impairment. Cluster of physical, behavioral, and mood changes with cyclical occurrence during luteal phase of menstrual cycle.
Psychogenic Polydipsia	Using Diagnostic and Laboratory Studies	Dilute urine 1.005 & low sodium
Psychosis, unspecified	Pharmaceutical Therapeutics	2nd generation antipsychotics = 1st line (ex. Risperidone, Olanzapine, Quetiapine; clozapine for refractory cases (ex. no significant improvement after 2-6 weeks of pharm therapy). First generation antipsychotics (ex. Haloperidol & Chlorpromazine) are better for treating (+) sxs but are associated with increased extrapyramidal sxs. Other meds: benzisoxazoles (ex. Risperidone); Quinolinones (Abilify), Lithium; Valproate, carbamazepine
Schizoaffective Disorder	Formulating Most Likely Diagnosis	Schizophrenia + mood disturbance (MDD or manic episode).
Schizoid Personality Disorder	Formulating Most Likely Diagnosis	voluntary social withdrawal, loner, hermit, reclusive, isolated, anhedonia introversion (appears indifferent/cold, lacks response to praise/criticism, flat affect) and inability to form relationships
Schizophrenia	History Taking and Performing Physical Exam	> 6 months duration of illness with 1 month of acute sxs along with functional decline. Onset usually early 20's (males) and late 20's (females); Risk factor: fm hx; Decreased CNS gray matter, increased size of ventricles; increased CNS dopamine receptors. Ask about positive vs. negative sxs in hx.
Schizophrenia	Clinical Intervention	Hospitalization for acute psychotic episodes
Schizophrenia	Pharmaceutical Therapeutics	2nd generation antipsychotics = 1st line (ex. Risperidone, Olanzapine, Quetiapine; clozapine for refractory cases (ex. no significant improvement after 2-6 weeks of pharm therapy). First generation antipsychotics (ex. Haloperidol & Chlorpromazine) are better to tx (+) sxs
Schizophreniform Disorder	Formulating Most Likely Diagnosis	Meets criteria for schizophrenia but < 6 months duration.
Serotonin Discontinuation Syndrome	Pharmaceutical Therapeutics	Reinstitution of antidepressant medication.
Shaken Baby Syndrome	History Taking and Performing Physical Exam	Ask if any hx of abuse, postpartum depression, etc. Observe child for any signs of abuse, bruising, etc. Look for old fractures on x-ray. Shaken baby syndrome often produces bilateral retinal hemorrhage and diffuse brain injury. May have blunt head trauma. May present with seizure. Other sxs include failure to thrive, poor feeding. Look for hx from parent that does not make sense for the resulting injury.
Somatic Symptom Disorder (Somatization Disorder)	Formulating Most Likely Diagnosis	chronic condition in which pt has physical sxs involving > 1 part of the body but no physical cause can be found; excessive thoughts, feelings, or behaviors/time devoted to sxs/health concerns. Pain= predominant sx

PROBLEM	TASK CATEGORY	ANSWER
Substance Abuse, Ecstasy	Formulating Most Likely Diagnosis	MC in young party goer; Vitals: HTN, tachycardia, hyperthermia. Hyponatremia due to increased fluid intake --> neuro sxs (confusion, seizure, cerebral edema, cerebral herniation, death). Hepatotoxicity: jaundice, abdominal pain, N/V, increased bilirubin, increased AST/ALT
Substance Use Disorder, Nicotine	History Taking and Performing Physical Exam	Ask about hx of tobacco use/smoking hx. Look for signs of yellowing of the fingers/ nails from holding cigarettes. May observe smell of nicotine on pt's hair/clothing. Agitation if attempts to withdraw. May have weight gain if attempting to cease.
Suicide Risk	Health Maintenance, Patient Education, & Preventative Measures	Females more likely to attempt; males more likely to complete suicide. RF's include: previous attempt or threat (strongest RF), majorly depressed states, males, increased age, Caucasians, substance abuse, not married>never married>widowed>separated or divorced>married without children>married with children (marriage is protective). Others include positive family hx of suicide, history of impulsivity, or chronic illness. Physicians at increased risk of suicide
Tardive Dyskinesia	Pharmaceutical Therapeutics	1. Switch to 2nd generation antipsychotic; 2. deutetrabenazine (Austedo); 3. Valbenazine (Ingrezza)

PROBLEM	TASK CATEGORY	ANSWER
DERMATOLOGY		
Acne Vulgaris	Using Diagnostic and Laboratory Studies	Clinical dx. Hyperandrogenism should be considered if there are other signs of androgen excess (test for DHEA-S, total testosterone, free testosterone, etc.)
Basal Cell Carcinoma	Using Diagnostic and Laboratory Studies	punch or shave biopsy
Basal Cell Carcinoma	Clinical Intervention	1. Electrodesiccation/curettage used MC in non-facial; 2. +/- Mohs for face or recurrent; 3. Surgical excision; 4. Small superficial: imiquimod & 5FU for superficial non-facial lesions.
Basal Cell Carcinoma	Formulating the Most Likely Diagnosis	translucent/pearly/waxy papule & central ulceration; raised/rolled borders; telangiectasias; bleeds easily
Bullous Pemphigoid	Formulating the Most Likely Diagnosis	urticarial plaques --> tense bullae (don't rupture easily); Lack of Nikolsky's sign; Subepidermal involvement. Chronic widespread autoimmune blistering skin disease of the elderly (65-75 YO).
Bullous Pemphigoid	Pharmaceutical Therapeutics	High potency topical corticosteroids (such as clobetasol). Systemic corticosteroids, antihistamines. Immunosuppressants (Azathioprine). Topical corticosteroids in mild disease or applied early to lesions to prevent blisters.
Burns, unspecified	Health Maintenance, Patient Education, & Preventative Measures	wash wound using only mild soap & water. Do not apply ice directly. Cool compresses to stop thermal burning. Chemical burns: irrigate profusely with running water for at least 20 minutes. Debridement. Ruptured blisters should be removed. Pain: acetaminophen, NSAIDs alone or in combo w/ opioids. Abx: silver sulfadiazine (none on face); Bacitracin on superficial burns. IV fluids: LR 4 mL/kg/% TSA- 1/2 in 1st 8 hrs, 1/2 over the next 16 hours.
Congenital Nevus	History Taking and Performing Physical Exam	Congenital nevi are present at birth and result from a proliferation of benign melanocytes in the dermis, epidermis, or both. Congenital nevi are one of several known risk factors for the eventual development of melanoma. By the time a child reaches adolescence, the incidence of melanoma increases substantially. Many clinicians manage small and medium-sized congenital melanocytic nevi with baseline photography and regular follow-up.
Cutaneous Anthrax	Formulating the Most Likely Diagnosis	group of small bumps/blisters that may itch. Swelling around the sore. Painless skin sore (ulcer) w/ a black center (eschar).
Cutaneous Candidiasis	Pharmaceutical Therapeutics	Head or nails = oral "-azole"; everything else = topical antifungals.
Dengue fever	Formulating the Most Likely Diagnosis	Biphasic fever (initial high fever for 3-7 days then remission for hours to 2 days, then second fever phase "break bone" joint pain, headache, sore throat); biphasic rash (erythematous skin mottling, flushed skin, then defervescence with the onset of a maculopapular rash that spares the palms & soles, then petechiae on the extensor surface of limbs). Hemorrhagic fever usually in children in endemic areas. Tourniquet test purpura from the pressure of the tourniquet placed on the arm. Hepatitis.
Dermatitis, steroid-induced	Clinical Intervention	Gradual steroid taper, switch to a lower-potency steroid.
Dermatophytosis (tinea)	Pharmaceutical Therapeutics	1st line - Topical "-azoles" x 4 weeks (antifungal)
Dyshidrosis	Pharmaceutical Therapeutics	high-strength topical steroids and cold compresses; systemic steroids
Drug effect, adverse: antibiotics	Pharmaceutical Therapeutics	Can get petechial rash when given certain abx (esp. Ampicillin)
Erythema Infectiosum (fifth disease)	Applying Basic Scientific Concepts	Parvovirus B19; MC < 10 YO; Transmission via respiratory droplets. Incubation period 4-14 days.
Erythema Infectiosum (fifth disease)	History Taking and Performing Physical Exam	Pt may have a hx of coryza & fever. Older children & adults may report hx of arthropathy/arthralgias. Ask about any history of sickle cell disease or G6PD deficiency. PE will show "slapped cheeks" w/ circumoral pallor for 2-4 days then development of a lacy reticular rash (esp on upper extremities) that spares palms/soles.

PROBLEM	TASK CATEGORY	ANSWER
Erythema multiforme major	History Taking and Performing Physical Exam	Hx: type IV hypersensitivity reaction. Skin lesions that evolve over 3-5 days & persist about 2 weeks. Any hx of herpes simplex virus, mycoplasma, S. pneumonia. Medication hx (sulfa drugs, beta-lactams, phenytoin, phenobarbital). PE: target lesions with involvement of > 1 mucous membranes (oral, genital, or ocular mucosa) < 10% BSA acrally --> centrally. No epidermal detachment.
Erythema Toxicum, Newborns	Health Maintenance, Patient Education, & Preventative Measures	spontaneously resolves in 1-2 weeks.
Guttate Psoriasis	History Taking and Performing Physical Exam	Ask about any hx of psoriasis in the past/other psoriasis signs (ex. nail pitting, oil spots, auspitz sign, koebner's phenomenon, psoriatic arthritis). On PE, examine the extensor surfaces of elbows/knees/scalp/nape of neck, examine nails, look for "sausage digits" of the fingers; small erythematous papules w/ fine scales, discrete lesions & confluent plaques.
Herpes, type 3 (zoster)	Pharmaceutical Therapeutics	Acyclovir, valacyclovir, famciclovir (given within 72 hours to prevent postherpetic neuralgia)
Impetigo	Formulating the Most Likely Diagnosis	vesicles, pustules with "honey-colored crust". Associated with regional lymphadenopathy. Staph aureus MC; GABHS 2nd MC. Primarily on surfaces of the face.
Impetigo	Using Diagnostic and Laboratory Studies	Clinical dx. Gram stain & culture if atypical presentation.
Impetigo	Pharmaceutical Therapeutics	1. Mupirocin (Bactroban) topically is the drug of choice tid x 10 days. Others: bacitracin. 2. Extensive disease or systemic sxs (ex. fever) -systemic abx: Cephalexin, dicloxacillin, clindamycin, erythromycin, azithromycin or clarithromycin
Intertrigo	Applying Basic Scientific Concepts	inflammatory condition of skin folds. Aggravated by heat, moisture, friction. Candida infxns worsen it --> satellite lesions. Itching, burning, pain, stinging.
Lichen Planus	Formulating the Most Likely Diagnosis	purple, polygonal, planar, pruritic papules with fine scales & irregular borders on extensor surfaces of extremities, skin, mouth, scalp, genitals, nails, and mucous membranes. May develop Koebner's phenomenon (new lesions at site of trauma).
Melasma	Health Maintenance, Patient Education, & Preventative Measures	Avoid risk factors such as increased estrogen exposure (OCP's, pregnancy), sun exposure. More likely in women with darker complexions. Use protective sunscreens.
Molluscum Contagiosum	Applying Basic Scientific Concepts	viral infxn (poxviridae family); highly contagious; MC in children, sexually active adults, pts with HIV
Molluscum Contagiosum	Formulating the Most Likely Diagnosis	single or multiple dome-shaped, flesh-colored to pearly-white, waxy papules w/ central umbilication. Curd-like material may be expressed if squeezed.
Molluscum Contagiosum	Pharmaceutical Therapeutics	Cantharidin, topical retinoids.
Neoplasm, axilla, benign	Clinical Intervention	Seborrheic Keratosis: No tx needed (benign). Cosmetic mngmnt: cryotherapy, curettage or laser therapy. Lipoma: no tx needed. May perform surgical removal for cosmetic reasons.
Neurofibromatosis	History Taking and Performing Physical Exam	Hx: ask about any first degree relative with NF1, any hx of scoliosis or long bone abnormalities. PE: > 6 café-au-lait spots, inguinal/axillary freckling, lisch nodules of the iris seen on slit lamp exam, optic pathway gliomas (afferent pupillary defect)
Neurofibromatosis	Formulating the Most Likely Diagnosis	café-au-lait spots and soft, fleshy skin tumors
Oral Lichen Planus	Applying Basic Scientific Concepts	T-cell mediated inflammatory reaction against exogenous or endogenous trigger. Increase incidence in pts with HCV infection.
Pediculosis Pubis	Pharmaceutical Therapeutics	Topical permethrin or pyrethrin; 2nd line is lindane. Others: malathion; PO ivermectin in refractory cases.

PROBLEM	TASK CATEGORY	ANSWER
Pemphigus Vulgaris	Formulating the Most Likely Diagnosis	Oral mucosal membrane erosions & ulcerations first --> then painful flaccid bullae that rupture easily, leaving painful denuded skin erosions that bleed easily. (+) Nikolsky sign
Pityriasis Rosea	Using Diagnostic and Laboratory Studies	Clinical dx- cause unknown but possibly HHV7. Confirm with potassium hydroxide (KOH) to look for hyphae
Pityriasis Versicolor	Pharmaceutical Therapeutics	2.5% selenium sulfide shampoo or imidazole cream, PO fluconazole
Pressure Ulcer	Health Maintenance, Patient Education, & Preventative Measures	pressure redistribution- appropriate use of pressure-reducing devices/surfaces and proper patient positioning; turn often; good hygiene/keep area clean.
Psoriasis	Pharmaceutical Therapeutics	1. Mild-Mod: high-dose topical steroids = 1st line +/- valvipotriene, topical tar, tazarotene 2. Mod-Severe: phototherapy (UVB, PUVA). Systemic tx (ex. Methotrexate, cyclosporine, retinoids (acitretin); biologic agents.
Psoriasis	Health Maintenance, Patient Education, & Preventative Measures	MC on extensor surfaces. Educate patients about signs/sxs of psoriatic arthritis. Usually improves with sunlight/in the warmer months.
Scabies	Using Diagnostic and Laboratory Studies	Often a clinical diagnosis. Skin scraping of the burrows with mineral oil to identify mites or eggs under microscopy.
Scabies	Health Maintenance, Patient Education, & Preventative Measures	Apply permethrin topical (elimite, nix) head to toe for 8-14 hours then shower; repeat in 1 week. Lindane is cheaper but should not be used after bath/shower (causes seizures; is also teratogenic). Clothing, bedding, etc. should be placed in plastic bag x 72 hours then wash/dry in heat.
Skin cancer, Melanoma	Using Diagnostic and Laboratory Studies	Full thickness wide excisional biopsy + LN biopsy
Skin cancer, Melanoma	Clinical Intervention	1. Complete wide surgical excision with LN biopsy or dissection. 2. +/- adjunct therapy: alpha-interferon, immune therapy, or radiotherapy
Squamous Cell Carcinoma	Applying Basic Scientific Concepts	2nd MC skin cancer. Often preceded by actinic keratosis (AK), HPV infection, sun & environmental exposer. MC on lips, hands, neck & head. Malignancy of keratinocytes of skin/mucous membranes: hyperkeratosis & ulceration.
Steven Johnson Syndrome (SJS)	Formulating the Most Likely Diagnosis	Fever and flu-like/URI sxs for 1-3 days prior to painful oral and skin erythematous macules with purpuric centers. Leads to epidermal detachment (positive Nikolsky's sign)
Tinea Capitis	Pharmaceutical Therapeutics	PO Griseofulvin = 1st line. PO Terbinafine, Itraconazole, or Fluconazole = 2nd line.
Tinea Cruris	Applying Basic Scientific Concepts	"jock itch": diffusely red rash on groin or scrotum; fungal skin infection- Trichophyton infects keratinized tissues in the stratum corneum of the skin, hair, nails by ingesting keratin. RF's include increase skin moisture, immunodeficiency (HIV, DM), PVD.
Tinea Cruris	Using Diagnostic and Laboratory Studies	KOH smear. Wood's lamp: green fluorescence if due to microsporum.
Tinea Versicolor	Using Diagnostic and Laboratory Studies	1. KOH prep from skin scraping: hyphae & spores ("spaghetti & meatballs" 2. Wood's Lamp
Wound, Open (Cat Bite)	Pharmaceutical Therapeutics	Augmentin (Amoxicillin-clavulonate)
Xerosis, Skin	Formulating the Most Likely Diagnosis	dry skin- may have scales or small cracks in pt who is in dry environment, frequently washes hands, has inadequate hydration, swims in chlorine pools, etc. Usually worse during winter months.

PROBLEM	TASK CATEGORY	ANSWER
INFECTIOUS DISEASE		
Anthrax, inhalational	Formulating the Most Likely Diagnosis	Anthrax caused by inhalation is usually fatal, and sxs begin abruptly 1-3 days after exposure and follows a biphasic course. Typically begins as fever with nonproductive cough and may feature myalgia, fatigue, or retrosternal chest pain (may be mistaken for influenza or other viral respiratory illness). Transient clinical improvement may occur after the first few days, followed by rapid progression and clinical deterioration including: high fever, severe dyspnea, tachypnea, hypoxemia; hematemesis or hemoptysis, chest pain (may mimic acute coronary syndrome), decreased level of consciousness, meningismus, and coma (with meningeal involvement).
Ascariasis	Pharmaceutical Therapeutics	Mebendazole, Albendazole; Pyrantel if pregnant. Tx whole family.
Ascariasis	Formulating the Most Likely Diagnosis	small worm load-asx; larger load- vague abdominal sxs; high load-may migrate to pancreatic duct, bile duct, appendix, diverticula; pt may complain of cough, wheezing, hemoptysis, abdominal pain, and diarrhea.
Ascariasis	Using Diagnostic and Laboratory Studies	eggs in feces or large worm may be coughed, vomited, leave nose/anus/or mouth. Stool O&P; Eosinophilia
Asplenia	Health Maintenance, Patient Education, & Preventative Measures	Immunizations needed for Pneumococcal (aka: strep pneumonia)/meningococcal (aka: Neisseria)/H/Flu. Virus: HPV/Influenza/Zoster
Bacteremia	Applying Basic Scientific Concepts	Etiologies include: infectious diarrheas, infective endocarditis, osteomyelitis, orbital cellulitis, complicated cystitis or pyelonephritis, tetanus, pneumonia, septic arthritis, brain abscesses, meningitis, sepsis, etc. Bacteremia is the presence of viable bacteria in the circulating blood. More serious bacterial infections may result in death. Often, fever is the only presenting sign in pts with occult bacteremia.
Bacteremia	Using Diagnostic and Laboratory Studies	Fever, elevated WBC's, blood cultures positive (unless HACEK group infxn)
Bartonellosis (Cat-Scratch Disease)	Applying Basic Scientific Concepts	Bacteria hide from immune system in RBC's and endothelial cells lining blood vessels; insects transmit dz b/w cats, then cats lick/bite/scratch humans; manifests as gradual regional lymph node enlargement (axilla, groin, neck) which may last 2-3 months or longer and a distal scratch and/or red-brown skin papule (not always seen at time of the dz).
Bartonellosis (Cat-Scratch Disease)	Pharmaceutical Therapeutics	Azithromycin is 1st line. Or Doxycycline (preferred if optic neuritis or neurologic disease)
Candidal Balanitis	Formulating the Most Likely Diagnosis	inflamed foreskin; can lead to phimosis. Pt may be a diabetic or uncircumcised.
Candidal Balanitis	Pharmaceutical Therapeutics	Topical imidazole; clotrimazole 1%, or miconazole 2% BID x 1-3 weeks.
Catheter Associated Infection	Pharmaceutical Therapeutics	Depends on presentation (beyond bladder involvement or not). Caution with resistance, dependent on individual severity, community, and host factors/ resistance. Broad spectrum beta lactamase & MRSA coverage; very ill- imipenem + vancomycin.
Childbirth, cesarean delivery	Clinical Intervention	Within 60 minutes - pre-op abx prophylaxis (decreases risk of endometritis after elective C-section) - cefazolin usually
Cryptococcosis	Formulating the Most Likely Diagnosis	HIV patient + patient with meningitis
Cryptococcosis	Using Diagnostic and Laboratory Studies	Lumbar puncture: fungal CSF pattern. India ink stain shows encapsulated, budding round yeast)
Cryptococcosis	Pharmaceutical Therapeutics	1. Amphotericin B + Flucytosine x 2 weeks --> followed by PO Fluconazole x 10 weeks, 2. Pneumonia if immunocompetent: Fluconazole or Itraconazole x 3-6 months.
Cryptococcosis	Health Maintenance, Patient Education, & Preventative Measures	Prophylaxis in HIV: Fluconazole if CD4 < 100

PROBLEM	TASK CATEGORY	ANSWER
Cytomegalovirus (CMV) Retinitis	Formulating the Most Likely Diagnosis	immunocompromised pt w/ decompensating vision
Diphtheria	Formulating the Most Likely Diagnosis	gray and white patches on tonsils and back of throat that bleeds if scraped. Sore throat, fever, swollen lymph nodes; bull neck (enlarged cervical lymphadenopathy); myocarditis
Diphtheria	Using Diagnostic and Laboratory Studies	Clinical. PCR to confirm (isolate until 3 negative pharyngeal cultures)
Diphtheria	Pharmaceutical Therapeutics	Diphtheria antitoxin (horse serum) supplied by the CDC + Erythromycin or PCN x 2 weeks. Clindamycin or Rifampin are alternatives. PCN + Aminoglycoside for endocarditis.
Diphtheria	Health Maintenance, Patient Education, & Preventative Measures	Prophylaxis for close contacts: Erythromycin x 7-10 days or PCN benzathine G x 1 dose Prevention: DTaP
Erythema Infectiosum	Formulating the Most Likely Diagnosis	coryza, fever --> "slapped cheek" rash on face w/ circumoral pallor for 2-4 days --> lacy reticular rash on extremities (esp. upper). Spares palms/soles. Resolves in 2-3 weeks. Arthropathy/arthralgias in older children/adults.
Erythema infectiosum (fifth disease)	Applying Basic Scientific Concepts	Parvovirus B19. MC <10 YO. Transmission via respiratory droplets. 4-4 day incubation period. PVB19 may cause aplastic crisis in patients with sickle cell disease or G6Pd deficiency.
Fever, Dengue Hemorrhagic	Formulating the Most Likely Diagnosis	Biphasic fever: high fever --> breaks x 2 days --> second phase: "break bone" joint pain, headache. Biphasic rash: flushed skin, mottling --> defervescence (when fever comes down) w/ onset of maculopapular rash --> petechiae on extensor surface of limbs Hemorrhagic fever: ecchymosis, GI bleeding, epistaxis Tourniquet test: purpura from tourniquet pressure; hepatitis; ascites; shock Usually in children in endemic areas
Fever, Dengue Hemorrhagic	Health Maintenance, Patient Education, & Preventative Measures	Prevention: Permethrin on clothes, DEET on body
Food Poisoning, Staphylococcus	Applying Basic Scientific Concepts	noninvasive (enterotoxin) infectious diarrhea- vomiting, watery, voluminous (involves small intestine), no fecal WBC's or blood. Short incubation period within 6hrs (due to heat stable enterotoxin). Food contamination MC source (ex. dairy products, mayonnaise, meats, eggs).
Gonococcal Infection	Using Diagnostic and Laboratory Studies	urethral or cervical swab, urine testing - Nucleic Acid Amplification Test (NAAT) or culture
Gonococcal Infection	Pharmaceutical Therapeutics	Ceftriaxone 250 mg IM + Doxy or Azithro
Herpes Simplex Virus Type 2 (genital, penis)	Formulating the Most Likely Diagnosis	prodromal burning, paresthesia, tingling; painful grouped vesicles on an erythematous base
Herpes Simplex Virus Type 2 (genital, penis)	Using Diagnostic and Laboratory Studies	Clinical Dx. PCR most sensitive and specific test for HSV. Tzank smear = intranuclear inclusion bodies and multinucleated giant cells.
Herpes Simplex Virus Type 2 (genital, penis)	Pharmaceutical Therapeutics	Acyclovir (IV for encephalitis), Valacyclovir, Famciclovir
Herpes Zoster Ophthalmicus	Formulating the Most Likely Diagnosis	shingles involving the 1st division of the trigeminal nerve. Hutchinson's sign: lesions on nose usually heralding ocular involvement. Dendritic lesions on slit lamp exam if keratoconjunctivitis.
Herpes Zoster Ophthalmicus	Pharmaceutical Therapeutics	1. PO antiviral (ex. PO acyclovir), 2. May add Trifluridine, acyclovir or vidarabine ophthalmic.
Histoplasmosis	Pharmaceutical Therapeutics	1. Mild-Moderate: Itraconazole 1st line. 2. Severe disease: Amphotericin B (also used if Itraconazole therapy is ineffective)

PROBLEM	TASK CATEGORY	ANSWER
HIV Disease	Using Diagnostic and Laboratory Studies	1. Antibody Testing: ELISA (screening test), Rapid testing: blood or saliva 2. Confirmatory test: Western Blot 3. HIV RNA viral load: can be used to monitor infectivity & tx effectiveness in pts diagnosed with HIV
HIV/AIDS	Applying Basic Scientific Concepts	HIV: retrovirus (changes viral RNA into DNA via reverse transcriptase). HIV-1 (MC) and HIV-2. Transmission: sexual intercourse, IV drug use (shared needles, etc.), mother to child transmission (during birth or breastfeeding), receipt of blood products before 1985, mucosal contact with infected blood or needle stick injuries. AIDS is defined as CD4 count < 200 or the development of an AIDS-defining illness with or without HIV testing. Get recurrent severe & potentially life-threatening opportunistic infections or malignancies.
HIV/AIDS	Pharmaceutical Therapeutics	HAART Regimens for Treatment Naïve Pts: 1. NNRTI + 2 NRTIs or 2. PI + 2 NRTIs or 3. INSTI + 2 NRTIs
HIV/AIDS	Health Maintenance, Patient Education, & Preventative Measures	Avoid IV drug use/sharing needles; protection during sexual intercourse. If needle stick, report immediately. Post-exposure prophylaxis: in patients with high risk of infection (ex. occupational exposure) best started within 72 hours of incident (the earlier the better).
HIV/AIDS, cytomegalovirus	Applying Basic Scientific Concepts	HHV5. Present in most people (70% in the US). Clinical disease only in immunocompromised pts (ex. CMV retinitis if CD4 < 50; colitis if CD4 < 100).
Humanpapilloma virus (HPV) infection	History Taking and Performing Physical Exam	cutaneous HPV: verruca (warts)- common (vulgaris), plantar (plantaris), flat (plana) mucosal HPV: genital warts (condyloma acuminata), cervical dysplasia/cancer, & anogenital carcinoma
Immunization Normal Schedule: MMR	Health Maintenance, Patient Education, & Preventative Measures	1st dose @ 12-15 months; 2nd dose @ 4-6 yrs.
Infection, Shigella dysenteriae	Formulating the Most Likely Diagnosis	Lower abdominal pain, high fever, tenesmus, explosive watery diarrhea (mucoid, bloody). Severe cases may lead to toxic megacolon. Febrile seizures common in young children.
Infestation, lumbricoides	Applying Basic Scientific Concepts	giant roundworm. MC intestinal helminth worldwide. Contaminated soil.
Liver Abscess	Applying Basic Scientific Concepts	Entamoeba histolytica = bug. Amebiasis. Causes GI colitis, dysentery (bloody diarrhea) - metronidazole
Lyme Disease	Applying Basic Scientific Concepts	Borrelia burgdorferi (gram negative spirochete); Ixodes (deer) tick (white-tailed deer); Highest likelihood of transmission if tick attached for at least 72 hours and engorged.
Lyme Disease	Formulating the Most Likely Diagnosis	Hx of tick bite. Early localized: erythema migrans; Early disseminated: arthritis, HA, CN7/Facial nerve palsy, AV heart block
Lyme Disease	Using Diagnostic and Laboratory Studies	1. Clinical. 2. Serologic Testing: ELISA followed by Western Blot (false positive ELISA seen with syphilis)
Lyme Disease	Pharmaceutical Therapeutics	Early Disease: 1. Doxycycline BID x 10-21 days; Azithromycin or Erythromycin if allergic. 2. Amoxicillin = TOC in kids < 8YO or prego. Late/Severe Disease: IV Ceftriaxone
Lyme Disease	Health Maintenance, Patient Education, & Preventative Measures	Prophylaxis: Doxycycline 200 mg x 1 dose within 72 hours of tick removal if tick is present for > 36 hrs & > 20% ticks infected in that area. If allergic --> No prophylaxis given.
Malaria	Applying Basic Scientific Concepts	RBC dz caused by Plasmodium falciparum (most dangerous), vivax, ovale, malaria. Transmitted by the female Anopheles mosquito. Sickle cell trait & thalassemia trait are protective against malaria.
Malaria	Formulating the Most Likely Diagnosis	Cyclical fever, leukopenia, hemolytic anemia, thrombocytopenia, HA, myalgias, GI sxs, splenomegaly. Cerebral malaria (coma) with P. falciparum.
Malaria	Using Diagnostic and Laboratory Studies	Gemsa stain peripheral smear (thin & thick): parasites in RBC's

PROBLEM	TASK CATEGORY	ANSWER
MRSA	Pharmaceutical Therapeutics	TMP-SMX (Bactrim), Clindamycin, Tetracycline (Doxycycline or Minocycline)
Mumps	Applying Basic Scientific Concepts	viral cause (paramyxovirus); respiratory spread; Mumps is the MCC of acute pancreatitis in children
Mumps	Formulating the Most Likely Diagnosis	Sxs begin w/ a few days of fever, HA, myalgia, fatigue, & anorexia; followed by development of salivary gland swelling within 48 hrs; Parotitis: obscure angle of the mandible
Mumps	Using Diagnostic and Laboratory Studies	Serologies. Increased amylase. Often clinical dx.
Mumps	Clinical Intervention	Supportive, anti-inflammatories; sxs usually last 7-10 days.
Mumps	Health Maintenance, Patient Education, & Preventative Measures	pts usually infectious 48 hrs prior to and 9 days after onset of parotid swelling; complications include orchitis (males) & neurologic manifestations (including meningitis, encephalitis, and deafness); Prevention w/ MMR vaccine.
Mycobacterium Avium Complex (MAC)	Health Maintenance, Patient Education, & Preventative Measures	No person to person contact transmission. Seen in HIV when CD4 < 50. HIV prophylaxis: if CD4 < 50 --> Clarithromycin, Azithromycin. Rifabutin 2nd line.
Neurosyphilis	Applying Basic Scientific Concepts	Tertiary syphilis. CNS infxn by Treponema pallidum; can occur any time after initial infxn.
Neurosyphilis	Formulating the Most Likely Diagnosis	HA, meningitis, dementia, vision/hearing loss, incontinence; Tabes dorsalis: ataxia, areflexia, burning pain, weakness, no proprioception. Argyll-Robertson pupil
Post Herpetic Neuralgia	Formulating the Most Likely Diagnosis	pain > 3 months, hyperesthesia or decreased sensation after shingles
Post Herpetic Neuralgia	Pharmaceutical Therapeutics	1. Gabapentin or TCA's; 2. Topical lidocaine gel, capsaicin.
Primary Syphilis	Using Diagnostic and Laboratory Studies	1. Darkfield microscopy. 2. Screening Tests: RPR, VDRL. 3. Confirmatory test: FTA-BS (Fluorescent Treponemal Antibody Absorption)
Rabies	Health Maintenance, Patient Education, & Preventative Measures	Infection prevented w/ proper wound care & post-exposure prophylaxis (immune globulin & vaccine). Animal causes: bats, opossum, raccoons, skunks, foxes, wolves (but not rodents). Prophylaxis considered if even potential contact b/w a human & a bat; includes pts who have been in a room w/ a bat if they are unable to rule out any physical contact. Vaccine- give for pre & post-exposure: 5 IM doses of human diploid cell vaccine (HDCV): days 0,3,7, & 14 (+/- 28th day) PLUS rabies immune globulin (1/2 in wound & 1/2 IM) within 6 days of exposure.
Ramsay Hunt	Formulating the Most Likely Diagnosis	Triad = ipsilateral facial paralysis (Bells Palsy CN7), ear pain, vesicles of auditory canal/auricle. Ipsilateral altered taste perception & tongue lesions. Decreased hearing, tinnitus, hyperacusis. Lacrimation occurs in some pts. Vertigo, ataxia.
Ramsay Hunt	Pharmaceutical Therapeutics	oral Acyclovir + corticosteroids
Rheumatic Fever	Formulating the Most Likely Diagnosis	Migratory polyarthritis, carditis, Sydenham's chorea, erythema marginatum, subcutaneous nodules; fever, joint pain (arthralgia), increased ESR, CRP & leukocytosis; EKG may show prolonged PR interval. Recent hx of strep infxn.
Rocky Mountain Spotted Fever	Applying Basic Scientific Concepts	Rickettsia Ricketsii. Vector: Dermacentor andersoni/variabilis (wood/dog tick). MC in south central and SE United States (esp spring/summer).
Rocky Mountain Spotted Fever	Formulating the Most Likely Diagnosis	Fever and HA, which is followed a few days later w/ the development of a rash. Rash is generally made up of small spots of bleeding and starts on the wrist/ ankles --> palms/soles then spreads centrally over 2-3 days.
Rocky Mountain Spotted Fever	Using Diagnostic and Laboratory Studies	Clinical dx (don't wait for serologies)

PROBLEM	TASK CATEGORY	ANSWER
Rocky Mountain Spotted Fever	Pharmaceutical Therapeutics	1. Doxycycline (even in children), 2. Chloramphenicol is TOC if pregnant.
Roseola	Formulating the Most Likely Diagnosis	occurs MC < 5 YO. Prodrome of high fever for 3-5 days --> fever resolves before onset of rose pink maculopapular, blanchable rash on the trunk/back --> face. Child appears "well" and alert during febrile phase
Rubella	Using Diagnostic and Laboratory Studies	1. Clinical. 2. Rubella-specific IgM antibodies using an enzyme immunoassay (EIA)
Rubella	Health Maintenance, Patient Education, & Preventative Measures	Generally no complications in children with Rubella. Teratogenic esp in 1st trimester: congenital syndrome (sensorineural deafness, cataracts, TTP-"blueberry muffin rash", mental retardation, heart defects); part of the TORCH syndrome.
Ruptured Spleen	Health Maintenance, Patient Education, & Preventative Measures	complication of mononucleosis (severe fatigue, fever, sore throat, posterior LAD, splenomegaly); petechial rash if given "-cillins" (ex. Amoxicillin). Avoid trauma/contact sports for at least one month after mono dx to prevent spleen rupture.
Scarlet Fever	Pharmaceutical Therapeutics	1. Penicillin G or VK 1st line. 2. Macrolides if PCN allergic.
Schistosomiasis	Formulating the Most Likely Diagnosis	Typically in the tropics (wading/swimming in fresh or salt water). Pts may develop a pruritic rash due to cercarial dermatitis (also called swimmer's itch). Fever, lethargy, malaise, and myalgia. Less common sxs include cough, HA, anorexia, and rash. RUQ pain and bloody diarrhea may also occur. Lymphadenopathy. May present with focal neurological deficits in acute schistosomiasis.
Secondary Syphilis	History Taking and Performing Physical Exam	Hx of when initial sxs began (2ry syphilis sxs usually occur a few weeks - 6 months after initial sxs). Ask about any hx of systemic sxs (fever, lymphadenopathy +/- tender, meningitis, headache, hepatitis). Get good sexual hx. Ask about any previous chancre (painless ulcer that healed spontaneously). PE: observe for maculopapular rash (diffuse, bilateral, involvement of palms/soles common); Condyloma Lata (wart-like, moist lesions involving the mucous membranes & other moist areas; highly contagious).
Sepsis, Bacterial	History Taking and Performing Physical Exam	Fever with hypotension/AMS and increased respiratory rate.
Syphilis	Pharmaceutical Therapeutics	Primary, Secondary, or early-latent: Penicillin G benzathine IM 2.4 million units x 1 dose Tertiary or late-latent: Penicillin G benzathine IM 2.4 million units every week x 3 doses PCN allergic: Doxycycline or Tetracycline, Macrolide, or Ceftriaxone
Systemic Inflammatory Response Syndrome (SIRS)	Clinical Intervention	1. pan culture prior to initiating abx; 2. Zosyn + Ceftriaxone or Imipenem; 3. IV isotonic fluids (NS,LR); 4. Vasopressor if no response to 2-3L of IV fluids +/- IV hydrocortisone (goal MAP > 60 mm Hg)
Tetanus	Using Diagnostic and Laboratory Studies	Clostridium tetani (gram positive rod) - see especially in puncture & crush wounds
Toxic Shock Syndrome	Applying Basic Scientific Concepts	May be seen with tampon use, diaphragm or sponge esp. > 24 hours; usually from staph aureus (produces an exotoxin) or strep pyogenes.
Toxic Shock Syndrome	History Taking and Performing Physical Exam	includes sudden onset high fever (> 102.2F), tachycardia, hypotension, N/V/D, pharyngitis, rash (diffuse erythematous macular rash like sunburn; includes palms/soles)
Toxoplasmosis	Formulating the Most Likely Diagnosis	Primary infxn: usually asx; mono-like illness, cervical LAD; Encephalitis & chorioretinitis in immunocompromised pts (CD4 < 100), fever, cervical LN, malaise, myalgias, HA; Congenital: part of ToRCH syndrome; triad of chorioretinitis, intracranial calcifications, hydrocephalus
Toxoplasmosis	Using Diagnostic and Laboratory Studies	PCR. Head CT/scan/MRI: +/- shows ring-enhancing lesions
Toxoplasmosis	Health Maintenance, Patient Education, & Preventative Measures	Prophylaxis if CD4 < 100: TMP-SMX (Bactrim)

PROBLEM	TASK CATEGORY	ANSWER
Trichomoniasis	Pharmaceutical Therapeutics	Metronidazole (Flagyl) 2 g PO x 1 dose, safe in pregnancy; Tinidazole.
Typhoid Fever	Formulating the Most Likely Diagnosis	Caused by Salmonella (S. typhi); Cephalic phase: HA, constipation, pharyngitis, cough --> crampy abdominal pain, diarrhea, "pea soup stools" (brown-green color). Intractable fever, relative bradycardia, hepatosplenomegaly, blanching "rose spots" appear in 2nd week. Pts may have (+) blood cultures for salmonella & leukopenia.
Upper Respiratory Tract Infection (URI)	Pharmaceutical Therapeutics	Symptomatic Tx: analgesics, antihistamine/decongestant combos, antitussive, bronchodilators, abx (usually viral- abx not recommended)

PROBLEM	TASK CATEGORY	ANSWER
HERMATOLOGY		
Alpha Thalassemia	Using Diagnostic and Laboratory Studies	1. CBC: hypochromic, microcytic anemia (decreased MCV ex. 60-75). Normal or increased RBC count; Normal or increased serum iron & iron stores. Hgb may be as low as 3-6. Peripheral smear: target cells, teardrop cells, basophilic stippling; Heinz bodies in Hemoglobin H disease. 2. Hb electrophoresis: normal HbA, normal HbA2, normal HbF (alpha is a dx of exclusion b/c peripheral smear is normal).
Alpha Thalassemia	Clinical Intervention	Mild Thalassemia (alpha-trait): No tx needed. Moderate disease: folate if reticulocyte count is high; avoid oxidative stress (ex. sulfa drugs); avoid iron supplementation. Severe disease: 1. blood transfusion: weekly to correct anemia. Vit C, folate supplementation. 2. Iron chelating Agents. 3. Splenectomy in some cases. 4. Allogenic bone marrow transplant = definitive management of major
Anemia of Chronic Disease	Using Diagnostic and Laboratory Studies	decreased serum iron, increased ferritin, decreased TIBC
Anemia, unspecified	Using Diagnostic and Laboratory Studies	Intrinsic (inherited disorders): sickle cell, thalassemia, G6PD, hereditary spherocytosis. Extrinsic (acquired disorders): autoimmune hemolytic anemia, DIC, TTP, HUS, Paroxysmal Nocturnal Hemoglobinuria, Hypersplenism Both intrinsic & extrinsic share these things in common: Reticulocytosis: bone marrow response to destruction --> release more immature RBC's (reticulocytes); Increased LDH (enzyme in RBC): RBC destruction --> increased serum LDH; Increased indirect bilirubin --> jaundice; increased direct (conjugated) bilirubin --> dark urine; Decreased haptoglobin: RBC destruction --> increased free Hgb --> haptoglobin binds free Hgb to reduce oxidative toxicity; (+) Schistocytes on peripheral smear (schistocytes are fragmented RBC's resulting from RBC destruction in spleen, liver, small blood vessels - small vessel thrombosis of DIC, TTP, HUS)
Aplastic Anemia	Using Diagnostic and Laboratory Studies	CBC, peripheral blood smears, Hgb electrophoresis, blood-group testing, biochemical profile, serology for hepatitis and other viral entities, autoimmune-disease evaluation for evidence of collagen-vascular disease, Fluorescence-activated cell sorter profiling, Fluorescent-labeled inactive toxin aerolysin testing, Kidney and liver function studies; transaminase, bilirubin, and lactate dehydrogenase levels. Bone marrow biopsy is performed in addition to aspiration to assess cellularity qualitatively and quantitatively.
Autoimmune Hemolytic Anemia	Clinical Intervention	1. Warm (IgG Ab): corticosteroids 1st line --> splenectomy or rituximab --> immunosuppressants, IVIG 2. Cold (IgM Ab): avoid cold exposure. Rituximab if tx is needed. Plasmapheresis if refractory. Coomb's (+): distinguishes it from hereditary spherocytosis
Beta Thalassemia	Applying Basic Scientific Concepts	decreased production of beta-chains leads to excess alpha chains. MC in Mediterranean (ex. Greeks/Italians), Africans.
Beta Thalassemia	Formulating the Most Likely Diagnosis	1. Beta-Thalassemia Trait (Minor): usually asymptomatic. Only 1 defective gene. 2. Beta-Thalassemia Intermedia: associated with anemia, hepatosplenomegaly, & bony disease. 3. Beta-Thalassemia Major (Cooley's anemia): usually asx at birth but become symptomatic at 6 months old. Frontal bossing, maxillary overgrowth, hepatosplenomegaly, severe hemolytic anemia, osteopenia, iron overload & pigmented gallstones.
Beta Thalassemia	Using Diagnostic and Laboratory Studies	1. CBC: hypochromic, microcytic anemia (decreased MCV), normal or increased RBC count & serum iron. Hgb usually ~6g/dL. Peripheral smear: target cells, teardrop cells, basophilic stippling, nucleated RBC's. 2. Hgb electrophoresis: B-Thal trait (Minor)--> low HbA, high HbA2, high HbF; B-Thal Major (Cooley's) --> Increased HgbF (up to 90%), increased HgbA2, Little to no HgbA 3. Skull x-rays: bossing w/ "hair on end" appearance due to extramedullary hematopoiesis.
Beta Thalassemia	Clinical Intervention	1. Minor: No medical care usually. Offer genetic counseling. 2. Major/Severe Anemia: Periodic blood transfusions. Vit C/Folate supplementation. Avoid excess iron intake. Iron chelating agents. Splenectomy if refractory. Allogenic Bone Marrow Transplant = definitive.

PROBLEM	TASK CATEGORY	ANSWER
Chronic Myelogenous Leukemia (CML)	Formulating the Most Likely Diagnosis	Pt usually > 50 YO; most asymptomatic until they develop blastic crisis (acute leukemia), splenomegaly; (+) Philadelphia chromosome; strikingly increased WBC count
Coagulation Defect, Protein C Deficiency	Applying Basic Scientific Concepts	protein C is a vitamin K-dependent anticoagulation protein (produced by the liver) that stimulates fibrinolysis & clot lysis (inactivated Factor 5 & 8). Increased risk of recurrent DVT and PE's. Autosomal dominant inherited hypercoagulable disorder.
Coagulation Defect, Protein C Deficiency	Pharmaceutical Therapeutics	Heparin --> oral anticoagulation for life.
Disseminated Intravascular Coagulation (DIC)	Formulating the Most Likely Diagnosis	Pt who is bleeding out & clotting.1. Widespread hemorrhage: venipuncture sites, mouth, nose, extensive bruising. 2. Thrombosis
Disseminated Intravascular Coagulation (DIC)	Clinical Intervention	1. Tx underlying cause = most important 1st step. 2. Severe bleeding --> FFP (replaces coagulation factors) + Cryoprecipitate (replaces fibrinogen) +/- platelet transfusion (if platelet count < 20,000) 3. Severe thrombosis --> Heparin
Drug effect, mechanism: Anticoagulants	Pharmaceutical Therapeutics	Heparin: intrinsic pathway; monitored with PTT; factors 8,9 (also 11,12). Warfarin: extrinsic pathway; monitored with PT/INR; factors 2,7,9,10.
Factor V Leiden Mutation	Applying Basic Scientific Concepts	MC inherited cause of hypercoagulability. RF's: European Descent & Fm hx of DVT's or unprovoked DVT's.
Factor V Leiden Mutation	Using Diagnostic and Laboratory Studies	1. Activated protein C resistance assay. 2. If positive, confirm with DNA testing. Normal PT/PTT.
Factor V Leiden Mutation	Pharmaceutical Therapeutics	1. High risk --> indefinite anticoagulation. May need thromboprophylaxis during pregnancy to prevent miscarriages. 2. Moderate Risk (ex. 1 thrombotic event with a prothrombotic stimulus or asx) --> prophylaxis during high-risk procedures.
G6PD Deficiency	Applying Basic Scientific Concepts	x-linked recessive trait that affects primarily African American males. Acute cases of hemolysis can be caused by infection (MC)-ex. pneumonia, specific oxidant meds (ex. sulfa drugs), foods (ex. fava beans) or chemicals
G6PD Deficiency	Formulating the Most Likely Diagnosis	African American male. Clinical signs include jaundice, pallor, dark urine. Often with a hx of infection, use of a sulfa drug, or after eating fava beans.
G6PD Deficiency	Using Diagnostic and Laboratory Studies	Peripheral smear: schistocytes ("bite" cells); Heinz bodies
G6PD Deficiency	Clinical Intervention	1. Self-limiting usually. Avoid offending drugs/food; hydrate. 2. Severe anemia: iron/ folic acid supplements +/- blood transfusions if severe.
Goodpasture Syndrome	Applying Basic Scientific Concepts	IgG antibodies against type IV collagen of the alveoli & glomerular basement membrane of the kidney.
Goodpasture Syndrome	Formulating the Most Likely Diagnosis	1. Glomerulonephritis (rapidly progressing) + 2. Pulmonary hemorrhage (hemoptysis)
Goodpasture Syndrome	Using Diagnostic and Laboratory Studies	1. Biopsy: linear IgG deposits in the glomeruli or alveoli on immunofluorescence [(+) anti-GBM Ab]
Goodpasture Syndrome	Clinical Intervention	1. Glucocorticoids (corticosteroids) + Cyclophosphamide 2. Plasmapheresis
Hemochromatosis	History Taking and Performing Physical Exam	Arthritis from calcium pyrophosphate deposition in joints leading to joint pains. The MC affected joints are those of the hands, particularly knuckles of the 2nd & 3rd fingers. Bronzing of the skin. This deep tan color, in concert with insulin insufficiency due to pancreatic damage, is the source of the nickname for this condition: "bronze diabetes". Cirrhosis, fatigue, weakness, cardiomyopathy, arrhythmias, hypogonadism, impotence, DM.
Hemochromatosis	Applying Basic Scientific Concepts	disorder of increased iron storage and increased intestinal iron absorption leading to increased serum iron & increased iron deposition in liver, heart, pancreas, adrenals, testes, kidneys, etc. Autosomal recessive. Sxs usually begin after 40 YO.

PROBLEM	TASK CATEGORY	ANSWER
Hemochromatosis	Using Diagnostic and Laboratory Studies	1. Increased serum iron, increased serum transferrin saturation; Normal/ decreased TIBC; increased Ferritin. 2. +/- Increased LFT's, genetic testing for HFE gene. Increased risk of hepatocellular carcinoma. 3. Liver Biopsy = Gold Standard: increased liver parenchymal hemosiderin
Hemochromatosis	Clinical Intervention	Phlebotomy weekly until depletion of iron (decreased ferritin, decreased transferrin saturation or mild anemia) --> Maintenance phlebotomy ~3-4 times a year for life. Chelating agents only if unable to do phlebotomy (ex. anemia); usually not needed. Tx any complications, test blood relatives, offer genetic counseling.
Hemochromatosis	Health Maintenance, Patient Education, and Preventative Measures	No iron pills, ETOH, or Vitamin C. Educate patient about the need for periodic phlebotomy throughout the year for life. Test blood relatives. Genetic counseling.
Hemolytic Anemia	Applying Basic Scientific Concepts	Occurs when RBC cannot maintain its intact structure during passages through circulation --> increased EPO secretion --> bone marrow stimulated to make RBC precursors --> reticulocyte count increases --> H & H increases.
Hemolytic Anemia	Pharmaceutical Therapeutics	Two means of reduction of antibody production: glucocorticoids & cytotoxic drugs. Most clinicians favor initial tx with glucocorticoids.
Hemolytic Anemia Secondary to Renal Failure	Pharmaceutical Therapeutics	Intravascular hemolysis can produce acute tubular necrosis due to hemoglobinuria. Sx: red/brown urine and plasma, low haptoglobin, high LDH, deteriorated renal function, fraction excretion of sodium less than 1%. Tx = hemodialysis.
Hemolytic Uremic Syndrome (HUS)	Formulating the Most Likely Diagnosis	Suspect in kid with GI sxs (ex. E.coli, Shigella, Salmonella), anemia, kidney damage (increased BUN/Cr), thrombocytopenia (petechiae, bruising); No neuro sxs or fever like in TTP.
Hemolytic Uremic Syndrome (HUS)	Using Diagnostic and Laboratory Studies	Same labs and peripheral smear as TTP
Hemolytic Uremic Syndrome (HUS)	Clinical Intervention	1. Observation in most children (usually self-limited). IV fluids to maintain renal perfusion. 2. Plasmapheresis (+/- FFP) if severe, neuro complications, non-renal complications Antibiotics may worsen due to increased verotoxin by cell lysis)
Hemophilia A	Applying Basic Scientific Concepts	Deficiency of Factor VIII (8), which affects the intrinsic pathway. Results in failure to form hematomas. Occurs almost exclusively in males.
Hemophilia A	Formulating the Most Likely Diagnosis	Usually a male with hemarthrosis (bleeding into wt. bearing joints ex. ankles, knees, elbow); excessive hemorrhage in response to trauma & surgery/incisional bleeding.
Hemophilia A	Using Diagnostic and Laboratory Studies	Low factor VIII (8), prolonged PTT; mixing study with normal plasma will correct/ normalize PTT
Hemophilia A	Clinical Intervention	1. Factor VIII infusion to levels 25-100% as needed. 2. Desmopressin (DDAVP) prior to procedures to prevent bleeding.
Hemophilia B	Applying Basic Scientific Concepts	aka Christmas disease. Deficiency of Factor IX (9). Almost exclusively in males.
Hemophilia B	Formulating the Most Likely Diagnosis	Clinically indistinguishable form Hemophilia A (same sxs) - ex. deep tissue bleeding
Hemophilia B	Using Diagnostic and Laboratory Studies	decreased serum factor IX (9), prolonged PTT
Hemophilia B	Clinical Intervention	Factor IX (9) infusion. Desmopressin not useful.
Henoch-Schonlein Purpura (HSP)	Applying Basic Scientific Concepts	90% in children (3-15 YO); MC after URI; systemic vasculitis. The exact cause for this phenomenon is unknown.
Henoch-Schonlein Purpura (HSP)	Formulating the Most Likely Diagnosis	Prodrome of HA, anorexia, fever --> develop rash (usually on legs, symmetrical - palpable purpura), abdominal pain/vomiting, joint pain (esp. knees/ankles), subcutaneous edema; hematuria, proteinuria

PROBLEM	TASK CATEGORY	ANSWER
Henoch-Schonlein Purpura (HSP)	Using Diagnostic and Laboratory Studies	Diagnosis is mainly clinical. Kidney biopsy will show mesangial IgA deposits. Normal coags (PT/PTT); Normal platelets.
Henoch-Schonlein Purpura (HSP)	Clinical Intervention	Supportive (self-limited; lasts 1-6 weeks). Bed rest, hydration, NSAIDs for joint pain.
Hereditary Spherocytosis	Applying Basic Scientific Concepts	Autosomal dominant. RBC membrane/cytoskeleton defect (spectrin) leads to increased cell fragility and sphere-shaped RBC's --> increased RBC hemolysis in spleen by splenic macrophages. Aplastic crisis if infected with Parvovirus B19.
Hereditary Spherocytosis	Formulating the Most Likely Diagnosis	hemolysis leading to anemia, jaundice, hepatosplenomegaly, pigmented black gallstones (calcium bilirubinate)
Hereditary Spherocytosis	Using Diagnostic and Laboratory Studies	1. Blood Smear: Hyperchromic microcytosis- 80% spherocytes (RBC's lacking central pallor) (+) Osmotic Fragility Test; Coombs' Test (-). Increased MCHC in hereditary spherocytosis.
Hereditary Spherocytosis	Pharmaceutical Therapeutics	1. Folic Acid (not curative but helpful b/c folate helps maintain RBC production & DNA synthesis). 2. Splenectomy = tx of choice in severe disease (stops splenic RBC destruction)
Hodgkin's Disease	Formulating the Most Likely Diagnosis	Pt around 20 YO or 50 YO (bimodal distribution) with painless lymphadenopathy in upper body, hepatosplenomegaly; Pel-Ebstein fever (cyclical fever that increases and decreases over a period of 1-2 weeks), night sweats, wt. loss, anorexia. Alcohol may induce lymph node pain. Reed-Sternberg cells ("owl-eye" appearance). Associated with Epstein-Barr virus (mono)
Hypercoagulable state due to malignancy	Formulating the Most Likely Diagnosis	Pt with signs/sxs of malignancy (ex. weight loss, night sweats, etc.) with thromboembolism (PE/DVT) yet may have thrombosis in unusual sites (ex. mesenteric vein, renal vein, hepatic, or cerebral thrombosis).
Hyperplasia, benign prostatic	Clinical Intervention	1. Observation: mild sxs (monitored annually). Avoid antihistamines & anticholinergics. 2. 5-alpha reductase inhibitors: Finasteride & Dutasteride - (+) effect on clinical course (size reduction/decreased need for surgery) but does not provide immediate relief. 3. alpha1 blockers: Tamsulosin (Flomax), Alfuzosin, Doxazosin, Terazosin - provides rapid sx relief but no effect on clinical course 4. Surgical: TURP
Idiopathic (Autoimmune) Thrombocytopenic Purpura (ITP)	Applying Basic Scientific Concepts	acquired, abnormal isolated thrombocytopenia (low platelet count) of idiopathic cause. Patho: autoimmune antibody reaction vs. platelets with splenic platelet destruction often following an acute viral infection
Idiopathic (Autoimmune) Thrombocytopenic Purpura (ITP)	Formulating the Most Likely Diagnosis	Often asx; Increased mucocutaneous bleeding: purpura, bruises, petechiae, epistaxis, bleeding teeth/gums; No splenomegaly. Acute ITP: MC in children after viral infxn (self-limited usually). Chronic ITP: MC in adults (often recurrent).
Idiopathic (Autoimmune) Thrombocytopenic Purpura (ITP)	Using Diagnostic and Laboratory Studies	Isolated thrombocytopenia with normal coag tests. Smear may show megakaryocytes or large-sized platelets.
Idiopathic (Autoimmune) Thrombocytopenic Purpura (ITP)	Pharmaceutical Therapeutics	1. Children: Observation* --> +/- IVIG 2. Adults: corticosteroids --> IVIG --> Splenectomy if refractory. Platelet transfusion if <20,000 to prevent spontaneous intracranial hemorrhage.
Iron deficiency anemia	Using Diagnostic and Laboratory Studies	decreased serum iron, decreased ferritin, increased TIBC; decreased RDW, decreased RBC count/Hct/Hgb; decreased MCV; decreased transferrin saturation <15%, decreased reticulocytes
Iron deficiency anemia	Applying Basic Scientific Concepts	MC due to bleeding. Microcytic anemia (MCV < 80).
Iron deficiency anemia	Pharmaceutical Therapeutics	Iron replacement: ex. ferrous sulfate 325 mg PO daily.
Iron deficiency anemia	Health Maintenance, Patient Education, and Preventative Measures	Supplementation leads to increased reticulocyte count within 7 days. Start low dose and gradually increase dose because of GI SE's. Better absorbed on an empty stomach. Vit. C increased iron absorption.

PROBLEM	TASK CATEGORY	ANSWER
Jaundice, Newborn	Applying Basic Scientific Concepts	Physiologic: usually due to increased indirect (unconjugated) bilirubin- the immature liver of a newborn is unable to efficiently conjugate Bili due to decreased UGT enzyme activity. Indirect bilirubin rises in days 3-5 and falls in about half of neonate during the first week of life. Pathologic: may be suggestive if jaundice occurs in the first 24 hours of life (usually indicates hemolysis or hereditary spherocytosis), persistent jaundice 10-14 days, increased direct (conjugated) bilirubin > 2 mg/dL, total Bili > 12 mg/dL. Increased indirect Bili may be physiologic or pathologic. Increased direct Bili is always pathologic. Physiologic (after 24 hrs. & peaks 3-5 days); Prematurity and breastfeeding jaundice (2nd-3rd day of life).
Leukemia, Chronic Lymphocytic (CLL)	Formulating the Most Likely Diagnosis	MC leukemia in adults overall. MC >50 YO, males, Caucasians. Most are asymptomatic (often incidental finding of leukocytosis on routine blood testing). Fatigue (MC), dyspnea on exertion, increased infections. Painful lymphadenopathy, hepatosplenomegaly.
Leukopenia	Pharmaceutical Therapeutics	Myeloid growth factors: These are proteins that stimulate the bone marrow to produce WBCs and are AKA "growth factors" or "colony-stimulating factors." Examples include filgrastim (Neupogen), tbo-filgrastim (Granix), and pegfilgrastim (Neulasta)
Macrocytic Anemia	Using Diagnostic and Laboratory Studies	MCV > 100 = macrocytic. MCV >115 almost exclusively seen with B12 or folate deficiency (esp. if hypersegmented neutrophils are present). B12 deficiency has (+) neuro sxs, increased serum homocysteine, and increased methylmalonic acid. Folate deficiency is not associated w/ neurologic sxs and has increased serum homocysteine only.
Megaloblastic Anemia	Clinical Intervention	Megaloblastic anemia due to: B12 deficiency, folate deficiency, ETOH, Liver dz, and hypothyroidism. Check for signs/sxs of these.
Multiple Myeloma	History Taking and Performing Physical Exam	Bone pain (esp. spine & ribs), Recurrent infxns (S. pneumo from leukopenia), Elevated calcium (hypercalcemia), Anemia (fatigue, pallor, weakness, wt. loss, hepatosplenomegaly), Kidney failure
Multiple Myeloma	Using Diagnostic and Laboratory Studies	1. Monoclonal (M) protein spike on serum electrophoresis (SPEP) 2. Monoclonal proteins in urine (Bence Jones proteinuria) on urine protein electrophoresis (UPEP) 3. CBC: Rouleaux formation --> increased ESR 4. Skull Radiographs: "punched-out" lytic lesions. Bone scans not helpful. 5. Bone Marrow Biopsy: plasmacytosis >10%
Multiple Myeloma	Clinical Intervention	Autologous stem cell transplant = definitive tx. +/- preceded by chemotherapy (ex. Thalidomide) or alkylating agents (ex. Melphalan). Bisphosphonates for bony destruction (ex. alendronate).
Paroxysmal Nocturnal Hemoglobinuria	Formulating the Most Likely Diagnosis	unexplained hemolytic anemia and associated sxs including fatigue, jaundice, and red/pink/black urine. Decreased bone marrow function in some individuals may further exacerbate anemia and cause other cytopenia.
Paroxysmal Nocturnal Hemoglobinuria	Clinical Intervention	Eculizumab (anti-complement CD5 Ab); Prednisone decreases hemolysis; marrow transplant
Pernicious Anemia	Applying Basic Scientific Concepts	It's autoimmune destruction/loss of gastric parietal cells that secrete intrinsic factor leading to B12 deficiency.
Pernicious Anemia	Using Diagnostic and Laboratory Studies	Increased MCV (>115). Decreased B12 levels. (+) intrinsic factor Ab, parietal cell Ab, increased gastrin levels. (+) Schilling test.
Pernicious Anemia	Clinical Intervention	B12 replacement: start with IM B12. Oral B12 for mild disease.
Pernicious Anemia	Health Maintenance, Patient Education, and Preventative Measures	Watch for signs of hypokalemia with tx.
Polycythemia Vera	Using Diagnostic and Laboratory Studies	Screening test: Hgb > 16 g/dL; Hct > 48%. Diagnostic test is subnormal EPO and either JAK2 V617F peripheral blood mutation or exon 12 mutation.

PROBLEM	TASK CATEGORY	ANSWER
Polycythemia Vera (Primary Erythrocytosis)	Applying Basic Scientific Concepts	acquired myeloproliferative disorder with overproduction of all 3 myeloid cell lines (primarily RBC's, but also associated w/ increased WBC's and increased platelets). Lymphocyte line is normal. Caused by JAK2 mutation. Peaks 50-60 YO. MC in men.
Polycythemia Vera (Primary Erythrocytosis)	Formulating the Most Likely Diagnosis	primary erythrocytosis = increased Hct in the absence of hypoxia; Sxs due to increased RBC mass: hyperviscosity or thrombus. HA, dizziness, tinnitus, blurred vision, pruritus esp after a hot bath, episodic burning/throbbing of hands/feet with edema. Splenomegaly, facial plethora.
Polycythemia Vera (Primary	Clinical Intervention	1. Therapeutic phlebotomy = Mgmt. of choice. Done until hematocrit < 45%. Low-dose aspirin prevents thrombosis. 2. Myelosuppression: hydroxyurea, interferon-alpha 3. Allopurinol if pt is hyperuricemic. Ruxolitinib is a JAK inhibitor.
Secondary Polycythemia	Formulating the Most Likely Diagnosis	increased hematocrit as a response to another process. Sxs related to underlying precipitating cause (ex. COPD); cyanosis, clubbing, HTN, hepatosplenomegaly, +/- heart murmur
Secondary Polycythemia	Applying Basic Scientific Concepts	Major cause of increased RBC mass. MC in obese, hx of cigarette smoking. Etiologies: 1. Reactive (physiologic): due to hypoxia (ex. COPD); 2. Pathologic ex. renal dz (renal cell carcinoma); 3. Relative polycythemia: normal RBC mass in the setting of decrease plasma volume, dehydration
Secondary Polycythemia	Using Diagnostic and Laboratory Studies	Increased RBC/hematocrit with normal WBC & platelets (normal WBC/platelets distinguishes 2ry from 1ry polycythemia vera)
Secondary Polycythemia	Clinical Intervention	Tx underlying disorder; Quit smoking
Sickle Cell Disease	Applying Basic Scientific Concepts	Sickle Cell Disease: autosomal recessive HgbSS; Sickle Cell trait: heterozygous HgbS (AS). Aplastic crisis if infected w/ Parvovirus B19
Sickle Cell Disease	Using Diagnostic and Laboratory Studies	1. CBC w/ peripheral smear: decreased Hgb (5-9 g/dL), decreased Hematocrit (17-29%), Increased reticulocytes. Sickled erythrocytes +/- Howell-Jolly Bodies (indicates functional asplenia) 2. Hemoglobin Electrophoresis: Sickle Cell Disease- HgbS, no HgbA, increased HgbF; Sickle Cell Trait- HgbS, decreased HgbA
Sickle Cell Disease	Clinical Intervention	Pain management- IV hydration, O2, hydroxyurea, folic acid, +/- RBC transfusions
Sickle Cell Disease	Health Maintenance, Patient Education, and Preventative Measures	Children should be immunized against S. pneumococcus, Hib, & N. meningococcus. They should also receive prophylactic penicillin from 4 months - 6 years old.
Thalassemia	Formulating the Most Likely Diagnosis	Microcytic anemia with normal/elevated serum iron or no response to iron treatment. Associated with severe anemia and abnormal peripheral smear for a given Hct level.
Thrombotic Thrombocytopenic Purpura (TTP)	Formulating the Most Likely Diagnosis	Pentad: thrombocytopenia, microangiopathic hemolytic anemia, kidney failure, neurologic sxs, fever; increased incidence with HIV.
Thrombotic Thrombocytopenic Purpura (TTP)	Clinical Intervention	1. Plasmapheresis = Tx of choice. 2. Immunosuppression: corticosteroids, cyclophosphamide, etc. No platelet transfusions (may cause thrombi formation). Splenectomy if refractory to plasmapheresis & corticosteroids.
Transfusion	Clinical Intervention	If any complications arise, stop the transfusion?

PROBLEM	TASK CATEGORY	ANSWER
PROFESSIONAL PRACTICE		
EMTALAEMTALA	Professional Pr+B4:B22actice	If you work at a facility that accepts Medicare/Medicaid, you are required to perform a medical screening exam (MSE) on every person that comes in. No refusal; civil penalties if you are in violation. ER must treat everyone. Anti-dumping law
Hepatitis A vaccination	Professional Practice	Offer to high risk people. Men who have sex with men. IV drug abuse. International travelers. This is a fecal-oral route so wash hands.
Legal/ethical: autonomy	Professional Practice	PAs autonomy is per state, and often has to do with the autonomy of the supervising physician.
Legal/ethical: beneficence	Professional Practice	Beneficence -- having the patient's best interest in mind
Legal/ethical: chain of custody	Professional Practice	Law enforcement When you take forensic data, how does it stay supervised and not tampered with Ex: rape, child abuse, assault
Legal/ethical: choice of treatment	Professional Practice	Full disclosure of options from a fiduciary perspective.
Legal/ethical: consent	Professional Practice	Informed consent -- the patient must be of sound mind and adult years to give this Implied -- in a true emergency, you can act without consent (as long as consent was not withdrawn by the patient beforehand) because it's implied the patient would want you to save his life
Legal/ethical: HIPAA	Professional Practice	Health Insurance Portability and Accountability Act of 1996" is United States legislation that provides data privacy and security provisions for safeguarding medical information.
Legal/ethical: hospice criteria	Professional Practice	patient is terminally ill, with a life expectancy of six months or less if the disease runs its expected course. No treatment to prolong life is expected.
Legal/ethical: living will (patient self determination)	Professional Practice	a written statement detailing a person's desires regarding their medical treatment in circumstances in which they are no longer able to express informed consent, especially an advance directive.
Legal/ethical: medical futility	Professional Practice	We should not recommend or provide treatments that could not help a patient
Legal/ethical: parental refusal of blood products	Professional Practice	If parents say no to blood transfusion --> don't give blood products Honor religious preferences
Legal/ethical: patient rights	Professional Practice	A patient has the right to impartial access to medical treatment or accommodations, regardless of race, national origin, religion, handicap, or source of payment. A patient has the right to treatment for any emergency medical condition that will deteriorate from failure to provide treatment.
Legal/ethical: prescribing medications	Professional Practice	Need documentation of clinical utility
Legal/ethical: prescribing rights	Professional Practice	In 44 states and D.C., PAs are authorized to prescribe medications in schedules II-V. Five states allow schedules III-V. Kentucky is the only state where PAs cannot prescribe controlled medications. Requires DEA registration.
Legal/ethical: research studies	Professional Practice	Patient must have knowledge of the study and consent to participation; institutional review board (IRB) monitors the study
legal/ethical: EMTALA	Clinical Intervention	The Emergency Medical Treatment and Labor Act (EMTALA) is a federal law that requires anyone coming to an emergency department to be stabilized and treated, regardless of their insurance status or ability to pay, but since its enactment in 1986 has remained an unfunded mandate.
Legal/medical ethics: living will	Clinical Intervention	Surrogacy: I fill out a form designating a surrogate so if I can't make decisions, my surrogate can for me.

PROBLEM	TASK CATEGORY	ANSWER
Medical informatics	Professional Practice	Can't access a chart unless for medical care reasons.
Medical informatics: medical record documentation	Professional Practice	Accurate for billing and coding purposes.
Patient care and communication: affordable and effective care; stewardship of patient resources	Professional Practice	We must provide care with the resources that patient has and can afford.
Physician/PA relationship: ethics	Professional Practice	PA can only do what supervising physician can do. Varies by state
Physician/PA relationship: scope of practice	Professional Practice	We can practice only to the scope of our supervising doctor.
Professional development: identifying appropriate reference sources	Professional Practice	Evidence based medicine is our fiduciary responsibility.
Terminal cancer	Professional Practice	"Terminal" by the patient's definition -- help patient fight it out if they want to Comfort/palliative care: no labs, no vitals
Ulcer, pressure	Health Maintenance, Patient Education, and Preventive Measures	Pressure redistribution -- appropriate use of pressure-reducing devices/surfaces and proper patient positioning

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Maximize Your Mind