Preparation for USMLE Step 1 based on learning within the UQ-Ochsner MD program

This guide was developed through a UQ Student Staff partnership based on near peer experiences of successful graduates of the UQ-Ochsner MD program. The content is founded on learning opportunities within the UQ-Ochsner MD program to support your preparation for USMLE Step 1. It is designed to supplement your USMLE studies through matching USMLE concepts to the UQ Doctor of Medicine Curriculum. It is not designed to replace the USMLE guide/resources provided by the Ochsner Clinical School.

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Immune System & Microbiology

- Differentiate between core features of gram (+) vs gram (-), spend some time learning key microbes (S. aureus, S. epidermidis, Candida Albicans) but do NOT feel like you need to learn every single microbe at this stage rather learn microbes as they come up in future modules
- Have a basic understanding of how drugs work (pharmacokinetics and pharmacodynamics)
- Work on building a foundation of the ANS (how the system works itself)
    - Get a good understanding of SNS vs PSNS
- CYP450 do not memorize all of the interactions at this point, just learn what the system is and why it can be affected
- You should have a comprehensive understanding of: Innate vs adaptive immunity, complement system
- Arachidonic Acid pathway
- Pathophysiology of fever
- Learn the steps of inflammation in detail and understand the differences between acute vs chronic inflammation
- How cytokines are a part different processes (not purely function but rather how they interact)

- Learn MOA of the antimicrobials mentioned in UQ lecture
- Learn MOA and use of NSAIDS
- Build the foundation for pathological concepts such as ischemia

Cardiovascular system

- Fully understanding the anatomy of the heart and major blood vessels. Pay attention to the surface anatomy of how the heart is oriented in our body with regards to location of the four chambers, major blood vessels and valves.
- Understanding heart embryology, fetal circulation, shunts
- Getting a solid understanding of key cardio phys concepts such as cardiac output, starling curve, blood flow mechanics, pressure loops, blood pressure regulation
- Understanding the connection between autonomic nervous system and the cardiovascular system (alpha and beta receptors location and function)
- Understanding blood pressure regulation (RAAS important tie in to renal physiology), hypertension 1 and 2, and understanding how antihypertensives work
- Cardiac myocyte and pacemaker action potentials, cardiac electrophysiology and conductive pathways
- Understand the normal axis of the heart and be able to link changes in cardiac electrical potential with deflections on the PQRST graph (ex. What causes positive/negative deflections on different EKG leads)
- Get comfortable with reading EKG tracings and developing a systemic approach to interpretation
- Differentiate between normal and abnormal heart sounds and murmurs. A nice approach would be to draw out the sound of the murmur, try to distinguish between systolic vs diastolic murmur, location of murmur, changes in murmur intensity with maneuvers
- Understand transport of oxygen and carbon dioxide in the blood, structure of hemoglobin and how the pulmonary circulation ties in with systemic circulation
- Embryological heart defects and cyanotic heart diseases, including Marfan's syndrome and Turner syndrome
- Learn the different causes of cardiomyopathy and differentiate between restrictive, dilated, and hypertrophic (HOCM)

- Be familiar with and be able to identify if a patient presents with cardiac tamponade or pericarditis, myocarditis
- Start to build a foundation for staging cancers and learn the types of cardiac tumors
- Learn lipid metabolism and transport. Don't forget your lipid lowering drugs
- Pathophysiology of atherosclerosis (including the steps in plaque formation) and acute coronary syndrome (NSTEMI VS STEMI VS UNSTABLE ANGINA VS STABLE ANGINA)
- Learn the timeline of the histological and gross morphological changes in the heart after an MI
- Risk factors and pathophysiology of AAA and aortic dissection in addition to clinical presentation (if someone walks into the ED with an aortic dissection how would you tell in the first 15 mins?)
- Understanding the process of thrombosis i.e platelet plug formation and coagulation cascade. Know your anticoagulants, heparin vs warfarin, noacs, antiplatelets and thrombolytics.
- Know complications of thrombosis including DVT, Pulmonary embolism, Myocardial infarction
- Arrhythmia: pathologies, EKG readings, and anti-arrhythmic drugs
- Cardiac biomarkers CK-MB, troponin I/T
- Pathophysiology of infective endocarditis including causative microbes and clinical signs and symptoms. When learning the microbes be able to correlate risk factors with specific bugs (i.e. prosthetic heart valves and staph epidermidis)
- Learn the differences between rheumatic heart disease and rheumatic fever, be able to link the patient's clinical presentation to its histopathology
- Comprehensive understanding of heart fail including categorization (systolic vs diastolic, HFpEF vs HFrEF, left vs right/cor pulmonale), heart failure stage classification (New York Heart Association), clinical features (for example nutmeg liver or increased JVP), drugs available to use for treatment and first line treatment
- Understand the physiology of ANP/BNP and how they respond to changes in the RAAS pathway
- Connect the dots between cardiac pathophysiology and clinical manifestations of relevant cardiovascular exam signs and symptoms (Tally O Connor is a great resource for understanding clinical signs and symptoms of heart disease)

Respiratory system

- Anatomy of the ear, nose and throat
- Anatomy of the respiratory tract and chest wall
- Anatomy of the diaphragm and structures that pass through
- Innervation of the diaphragm and chest wall
- Surface anatomy of chest and the lungs
- Definition of ventilation and perfusion in addition to etiologies of changes of ventilation or perfusion that led to V/Q mismatch
- Respiratory physiology including oxygen diffusion, ABGS, lung volumes and capacities, alveolar gas equation, ventilation, perfusion, oxygen hemoglobin dissociation curve, FEV/FEV1, spirometry testing and outputs, principles behind hypoxic vasoconstriction
    - Bonus free resource for understanding: John West YouTube Channel for Resp Physio
- Physiological difference (and respiratory test differences) in obstructive and restrictive lung disease
- Embryology of lung development (in addition to pathologies such as Potters sequence)
- Types of hypersensitivity reactions including MOA and examples
- Work environments and conditions associated with pneumoconiosis
- Normal and abnormal lung sounds (wheeze vs stridor, percussion notes, Kussmaul vs Cheyne stokes breathing)
- COPD vs emphysema vs asthma
- COPD pharm and management
- Asthma pharmacology (for chronic management and acute presentation)
- Upper respiratory and ear pathologies (otitis media, epiglottitis, strep throat, ect.)
- Cancer staging and cancer overview
- Types of lung cancer including risk factors, histo findings, symptoms and associated paraneoplastic syndromes
- Major chemotherapy drugs (MOA, use, AE, ect.)
- Pancoast tumors and the association to Horner's syndrome and the sympathetic chain

- ARDS
- Pulmonary embolisms: tie to the concept of dead space, diagnostic tools (d-dimer, CTPA, ect.), symptoms, and risk factors
- Physiological and pathological shunting (for example cancer, foreign body obstruction, congenital heart defects)
- Sleep apnea (central vs obstructive) characteristics, risk factors and treatment
- Sepsis pathophysiology and how to detect in a hospital patient (septic screening protocols)
- Differentiation cardiogenic vs noncardiogenic pulmonary edema
- Interstitial lung disease (types, causes and associations)
- CXRay imaging (normal anatomy on imaging, pathologies, ect) plus CT, CTPA, MRI of thorax
- Types of pleural effusion (transudate vs exudate via Light's Criteria, hemothorax)
- Pneumothorax (tension vs traumatic vs primary spontaneous vs secondary spontaneous)
- Learn the different microbes that cause pneumonia and most at risk populations in addition to the different types of pneumonia (lobar vs broncho vs interstitial, aspiration pneumonia)
- Learn the differences between the subtypes of tuberculosis, significant findings, etiologies, at risk populations, etc ; learn the differences between the subtypes of sarcoidosis significant findings, etiologies, at risk populations, etc
- Learn the viral microbes for rhinovirus, influenza, croup, and CMV
- Lung abscess microbes and causes
- Learn antimicrobials and antivirals for the above
- Respiratory failure type I vs II and how it is managed

Renal system

- Kidney anatomy and relationship to other abdominal organs
- Interpretation of arterial blood gas and common causes of high vs normal gap acidosis
- Nephron anatomy and physiology (including parts of the nephron and what substances are absorbed at each section, RAAS feedback, function of glomerulus)

- Understand common kidney function tests such as eGFR, creatinine, urea (what they measure, what high/low values may indicate)
- ADH and its effects on the nephron
- Urinary incontinence causes and other terminology used to describe functional bladder conditions such as urgency vs hesitancy
- Causes of hyper and hyponatremia and the correlation with body water content
- Nephritic vs nephrotic syndrome classification including clinical presentation, etiology, and examples
- Acute kidney injury subtypes
- Acute tubular necrosis causes, stages, and characteristics
- Types of nephritic and nephrotic conditions including imaging (EM, IF, LM), predisposing factors/conditions and treatment (if relevant)
- Tie normal embryologic development to congenital renal system abnormalities such as duplex collecting system or horseshoe kidney
- Learn the kidney stone subtypes, causes, imaging, what they are composed of, and the effect of pH
- Types of casts found in the urine and what conditions are associated with them
- UTI causes and treatment depending on likely microbes in addition to cystitis vs pyelonephritis
- Renal failure causes
- Dialysis subtypes (including how they work and what substances can be removed via dialysis)
- ACE inhibitors, ARBs, and diuretics indications, contraindications, MOAs and side effects
- Drug triple whammy - what drugs are involved and why is it bad
- Learn the different types of grafts, transplants and rejection (think MHC, HLA)
- Immunosuppression drug MOAs and side effects

Gastrointestinal system

- Kidney anatomy and relationship to other abdominal organs
- Endocrinology of the Stomach including
  - G cells (produce gastrin in response to intestinal PH changes)
  - Parietal cells (stimulated by gastrin and histamine), H/K ATPase
  - D cells somatostatin (makes everything stop)
- Distal to the stomach
  - Understanding the role of CCK in gastric emptying, pancreas secretions.
  - Brunner's glands for the production of bicarbonate and changes in high acid states.
- The vasculature of the GIT is usually tested in two ways:
  - Watershed zones (stomach for short gastrics (no collateral circulation curling's ulcers (hypovolemic ulcer) and usually the splenic flexure and sigmoid flexures.
  - And for ulcers of the duodenum (anterior versus posterior) with the gastroduodenal artery being involved.
- Know the marginal artery of drummond (anastomosis between SMA and IMA).
- Differentiating between ischemic colitis and intestinal ischemia.
- Keep in mind the retrocecal position of the appendix (2/3rds of the time?) when evaluating for appendicitis via US.
- Etiology of diverticulosis (intraluminal pressure but also intestinal wall defect d/t penetrating blood supply).
- Understand Heyde's syndrome (cardiac connection also ESRD)
- Common causes of distal rectal bleeding (diverticulosis and AVM)
- The esophageal transition between skeletal muscle and smooth muscle in the esophagus (this comes up more than you would think).
- The adenoma carcinoma sequence for colon cancer (KRAS, p53) (distal colon & classic circumferential "apple core" lesion). Keep in mind that Lynch syndrome (microsat instability) circumvents this pathway and for USMLE purposes will occur in the more proximal colon.
- You must know zenker diverticulum is within Killian's triangle. And know that Killian's triangle is between the inferior pharyngeal constrictor muscle and the cricopharyngeus muscle.
- Hernias (femoral, inguinal direct and indirect, umbilical) are well tested. Know the fascial walls of the inguinal canal (it keeps coming back).
- Histology of Ulcerative colitis and Crohn's disease comes up frequently as well as differentiating between them clinically.

- Histology of the Stomach is also tested, specifically that Chief cells are deep to the goblet cells in the gastric pits.
- Definitely know the Sudan stain for fecal fat (broad differential from pancreatic insufficiency to malabsorptive disorders (celiac) and gallbladder issues).
- Knowing that pancreatic enzymes are Ph dependent, inactivated enzymes will not participate in proteolysis.
- Salivary amylase (starches) in the oral cavity
- Pepsin in the stomach
- Know the enzymes that the pancreas secretes.
- Understand the serum lipase is more specific than amylase for pancreatitis. And that the severity of pancreatitis is poorly correlated with serum concentrations [amylase] [lipase]
- Congenital diaphragmatic hernia comes up with ludacris frequency and is almost always accompanied by imaging.
- Know the most common type of tracheoesophageal fistulas.
- Hirschsprung is also very frequently tested.
- Pseudomembranous colitis and its complications most commonly tested is toxic megacolon
- Intestinal malrotation and when the external rotation occurs are high yield
- Difference between gastroschisis and omphalocele (more associated with chromosomal abnormalities i.e. trisomy 21)
- Entomaeba histolytica treatment is valuable (intraluminal w/paromomycin/iodoquinol versus systemic with metronidazole).
- Giardia and symptoms of voluminous fatty diarrhea, understand etiology of the malabsorption.
- Gallstone ileus and pneumobilia.
- Pneumoperitoneum (d/t perforation) is very commonly tested.
- AlOH and MgOH were tested for side effects. Understand that bismuth sucralfate are used to coat ulcer beds.
- Know H2 blockers (famotidine) versus PPI (i.e. omeprazole) MOA
- Tums (calcium containing) and milk alkali syndrome (you never see this in real life but it's very testable).

Musculoskeletal system

- Be able to differentiate between Osteoarthritis and Rheumatoid Arthritis
  - Pathology, presentation, symmetry or lack thereof, treatment
  - Epidemiologic differences also important
- Rheumatoid arthritis
  - T-cell and B-cell roles in the inflammatory response
  - Be aware of the associated syndromes: Felty & Caplan
  - Joints of the hand commonly affected (DIP or not is often how I differentiate them)
- B27 + spondyloarthropathies
  - Psoriatic
  - Lymes arthritis
  - Gonococcal
- Innervations of the extremities (median/ulnar nerve, tibial/peroneal nerve)
- Brachial plexus, unfortunately, important to know all innervations of these nerve roots C5-T1
  - Erb Palsy vs Klumpke Palsy vs. Thoracic outlet syndrome vs winged scapula
  - Suprascapular nerve palsy is also tested (usually from backpack strap compression)
- In pediatrics consider avascular necrosis (perthes) versus transient synovitis versus henoch schonlein purpura.
- Epidemiology of Slipped Capital Epiphysis
  - In older children (+ obesity)
- Septic joint presentation and treatment options based on epidemiology
- Be able to differentiate between gout/pseudogout
  - Pathology, presentation, treatment
  - Epidemiology differences also important
- Be able to differentiate between Duchenne and Becker muscular dystrophy and myotonic dystrophy
  - Pathology, presentation, treatment
  - Genetic differences
- Genetics of achondroplasia
- Be able to differentiate between Rickets and Osteomalacia
  - Age differences and impact on osteoid vs cartilage
  - Etiology of patient can hint to diagnosis=Vitamin D deficiency from CKD, etc.
- Be able to differentiate between Polymyositis and Dermatomyositis
  - Pathology, presentation

- Osteogenesis imperfecta versus achondroplasia (they come up as answers together somewhat frequently)
- Paget's disease of the bone and osteosarcoma (bimodal distribution)
- Haeme onc should be covered during MSK (where they are i.e. metaphysis, diaphysis, epiphysis)
    - Bony malignancy including osteosarcoma, ewing sarcoma, osteoclastoma, osteochondroma)
- Osteoid osteoma versus osteoblastoma
    - Nocturnal pain and NSAIDs
    - spine versus peripheral bones
- Be able to differentiate between Marfan and Ehler-Danlos syndrome
    - Pathology, presentation, and genetics
- Laboratory abnormalities in different bone disorders
    - What happens to serum phosphate/calcium/alkaline phosphatase/parathyroid hormone
    - Osteomalacia/osteoporosis/osteopetrosis/paget's/osteitis fibrosa cystica
- Structure and use dependant remodeling of bone
- Paediatric fractures
    - Greenstick vs torus vs buckle
- Definition of Salter Harris fractures. Types I-V.
- Difference between galeazzi and monteggia fractures.
- Ottawa ankle criteria for ankle imaging
- 5th metatarsal fractures (epidemiology and mechanism of injury)
- Atlantoaxial instability in trisomy 21, also seen in Rheumatoid arthritis
    - Leads to UMN symptoms
- Ankle sprain: Anterior talofibular ligament injury (tears first mnemonic)
- Medial versus lateral epicondylitis
    - Not actually an "itis" as it is more of a fibrovascular proliferative disorder d/t repetitive use strain.
- Be able to differentiate between Osteogenesis Imperfecta and child abuse
    - Child abuse has bruising, OI has hearing loss/blue sclera, dental problems

Nervous System

- Supratentorial versus infratentorial brain tumors (pediatric and adult distributions)
- Painful red eye: scleritis, episcleritis, uveitis (often associated with autoimmune conditions and vasculitis so look for systemic symptoms) & glaucoma (acute angle closure)
- Pathways of efferent and afferent (i.e. spinothalamic, Dorsal column/medial lemniscus, lateral corticospinal.
- Brain stem rule of 4's medial versus lateral nerve roots. (This is likely the most useful tool to use in Neuro questions)
    - Wallenberg syndrome (medial medullary)
- Vasculature of the brain (anastomosis between) carotid canal.
- Knowing that parasympathetics are peripheral in the CN III (more susceptible to compression, versus MSK which is more susceptible to ischemia)
- Pcom aneurysms are high yield d/t compression of CN III (parasympathetics)
- Innervation of the lacrimal and salivary glands that transit with CN VII lots of questions on impairment of a CN and possible complications.
- Facial nerve transit of the ear structures and chorda tympani (taste).
- Tensor tympani innervation CN V, Stapedius innervation CN VII
- Be able to differentiate the differences between ischemic and hemorrhagic strokes
    - Be able to differentiate between embolic and atherosclerotic strokes
- Ischemic stroke risk factors vs hemorrhagic stroke risk factors
- Pathologies that cause lacunar strokes
    - Pathomechanism of hyaline arteriolosclerosis
    - Locations of lacunar strokes
- Characteristics of cytotoxic versus vasogenic edema
- Stroke symptoms depend on what is affected, determining location of stroke requires knowledge of functions of different areas (Brocas, Wernicke's rule of 4, etc.)
- Large vessel vs. small vessel strokes
    - Large vessel=rule of 4
    - Small vessel=deep cerebral structures
- Imaging requirements for stroke symptoms

- Histology changes after an ischemic stroke based on time (12-24 hours, 1 day, 3-5 days, etc)
- How to treat a stroke based on the etiology of the stroke as well as time since the stroke
- Cranial nerve=type (sensory/motor/both), function, exit site
    - LR6SO4 and their presentations (i.e. failure of abduction) versus diplopia with medial gaze (trochlear 7)
- Stages of sleep and the associated EEG waveform (BATS Drink Blood)
- Sleep disorders like narcolepsy and sleep apnea
- Be able to differentiate (pathology, presentation) between Alzheimers, NPH, Vascular dementia, Creutzfeldt-Jakob, Normal aging, Dementia with lewy bodies, Frontotemporal dementia
- Be able to differentiate (pathology, presentation) between Parkinson's, essential tremor, Multiple system atrophy, drug-induced parkinsonism, lewy body dementia
- Be able to differentiate between different causes of intracranial bleeding: Epidural hematoma, subdural hematoma, subarachnoid hemorrhage, lobar hemorrhage
    - Pathogenesis, presentation, and management of all
- Be able to differentiate between demyelinating disorders:
    - Guillain-barre, Progressive multifocal Leuckoencephalopathy (JC virus etiology usually in HIV+ patients or immunosuppressed), Acute Disseminated (postinfectious) encephalomyelitis, Charcot Marie tooth (congenital, gradual peripheral nerve dysfunction), Ataxia telangiectasia
- What is especially important between these (above) are presentation and timeline
- Be able to differentiate between Myasthenia gravis, lambert-eaton myasthenic syndrome, botulism
    - This is especially important for step 2
    - Pathology of these syndromes are more important than presentation
- Trigeminal neuralgia versus bell's palsy versus T1 sympathetic chain compromise (i.e. pancoast tumor)
- Opiates and their mechanism of action, get as thorough as which enzyme is inhibited leading to what K/Ca changes(mu Kappa and lambda opioid receptors)
    - Side effects of opiates on all systems (Gi=constipation, Cardiovascular=vasodilation/hypotension, etc.)
    - Loperamide MOA and side effects

Mental Health

- Know which neurotransmitters and receptors are associated with which mental health disorders (e.g. serotonin is involved with Depression).
- Know the DSM-V diagnostic criteria between different mental health disorders (e.g. depression vs bipolar disorder; mnemonics like DIGFAST are extremely useful) including timelines between similar disorders (e.g. schizophrenia vs schizophreniform disorder)
- Know the 1st and 2nd line treatments for the mental health disorders (pharmacological and non-pharmacological management)
- Understand the need for excluding medical conditions first before reaching psychological disorder diagnosis
- Understand the importance of when/what to ask for suicide risk assessment in a mental health patient and risk factors associated with suicide (e.g. access to firearms)
- Know the MOA and common side effects for the drugs used for mental health disorders (e.g. SSRIs can cause serotonin syndrome)
- Understand the medical complications that can develop from Schizophrenia and (e.g. cardiovascular disease) and how we monitor/manage the progress clinically
- Know the clinical features of overdose and withdrawal symptoms for alcohol and substances of abuse, and pharmacological management for acute toxicity.
- Know the long-term complications associated with EtOH consumption and principles of management

Hematology

- Be able to identify what the normal histological properties of different cell types (e.g. Neutrophils vs Macrophages), and the histological properties of abnormal cells that are characteristic to specific pathologies (e.g. sickle cells are pathognomonic for Sickle cell disease)
- Understand the multiple pathways involved with iron (e.g. iron metabolism, iron storage, iron transfer, involvement in hemoglobin, etc.).
- Know the different ABO blood group antigens, including who can donate/receive from what group, and the significance of Rhesus (Rh) blood groups clinically
- Know the causes of anemia, polycythemia, and iron overload (a table in your head helps!) including the pathophysiological mechanisms and therapeutic management (non-pharmacological and pharmacological).

- Know how to interpret diagnostic investigations of red blood cell disorders (e.g. peripheral blood smear, full blood count, iron studies, B12/folate, coagulation studies like PT, etc.) and hematological/immune system conditions (e.g. histological interpretation of biopsy sample, CXR, electrophoresis, etc.).
- Know the features of the different immune system conditions including lymphoid neoplasms (e.g. non-hodgkin lymphoma), myeloid neoplasms (e.g. acute myeloid leukemia), multiple myeloma, myelodysplastic syndrome/myeloproliferative disorders, and non-neoplastic causes of lymphadenopathy (e.g. infectious mononucleosis), and 1st line therapies.
- Understand the coagulation cascade and how the thrombotic/anti-thrombotic factors (e.g. von Willbrand factor), including platelets, affect haemostasis
- Know the features of the different hematological conditions (e.g. thrombophilia, thrombocytopenia, etc.), 1st line therapies (including blood product therapies).

Ophthalmology

- Understand the normal anatomy of the eye, the visual pathways, visual fields and extraocular eye muscles and the features of pathologies that cause abnormalities (e.g. how visual fields change with damage to the optic chiasm)
- Know the features (e.g. pathophysiology, clinical features, etc.) of common and serious conditions of the eye (e.g. common: strabismus; serious: retinoblastoma), including eye manifestations from immune system conditions. Know and understand the therapeutic interventions (e.g. non-pharmacological vs pharmacological therapies, MOI of pharmacological therapies, etc.)
- Know all the cranial nerves (a good mnemonic will help!), including their function and anatomical relevance, and the specific outcomes to function when they are damaged
- Know what eye pathologies look like visually under fundoscopy/fluorescein staining.

Additional suggested areas and resources

Biostatistics

- Ethical scenarios (wrong site procedures, physician choices in care, patient's insurance isn't covering treatment)
- Dirty Medicine biostatistics videos on YouTube, particularly as a final review before Step 1.
- Boards and Beyond videos for biostatistics followed by repetition from Anki decks of formulas/concepts are helpful for building a foundation. Biostats UWorld questions to understand how the formulas were applied in a question stem.

Biochemistry

- Genetic disorders, especially chromosomal disorders such as Edwards syndrome, Williams syndrome, etc.
- Lysosomal storage diseases and purine/pyrimidine synthesis may not seem high yield but they have a lot of tie ins that are fodder for questions on haem/onc pharmacotherapy.
    - These are very well covered with images in the cheesy lightyear deck.
- Pixorize was incredibly helpful for memorizing biochem content if you feel that Sketchy's visual mnemonics were helpful.
- Initial understanding of biochemistry pathways and associated diseases from Boards and Beyond and First Aid followed by regular repetition in seeing the pathways/diseases leading up to test day.

Pharmacology

- Antibiotics and their respective indications of use
- Antibiotics especially in the organism specific way that they are presented in sketchy micro and pharm are extremely high yield.
    - Pepper Deck (anki) as well as lolnotacop's sketchy micro deck.
- Sketchy pharm, combined with pre-made anki cards help hammer in the major mechanisms as well as drug interactions.
- Lots of repetition from Anki and doing questions helps solidify understanding for pharmacological management. Also, read all the answer choices from UWorld explanations to fully understand why another treatment is not as appropriate or maybe even second line after first line fails!

Microbiology

- Descriptive characteristics for all bugs, such as gram stain, hemolytic pattern, catalase +/-, anaerobic/aerobic
- Sketchy micro (with video specific decks) lolnotacop's sketchy micro anki deck.
- Develop flow-chart of all the gram +ve and gram -ve etc. Read all the answer choice explanations from UWorld to understand which organisms are found in what parts of the bodies and what gram type they are!

UQ-Ochsner Peer experiences – 'What I wished I told myself'

- "If you're crunched for time and you have to choose between doing a practice question and anki, do a practice question."
    - Self testing is invaluable. Beginning in semester 2 of year 1 I began attempting a 40 block of USMLERx every day in tutor mode untimed by system (cards, pulm, MSK etc). When I say attempting it's because there are days with a heavy burden of tutorials (clinical coaching, CBL, pathology etc) where you don't have any time at all. This first question-bank is about learning how to get the right answer and the speed will come later.
    - Practice questions give you a window of opportunity to examine what systems you know well and which ones you don't.

- "Don't make the same mistake twice. Make a flashcard for every wrong answer."
    - Wrong answers are discouraging. Especially in tutor mode when every wrong answer feels like a let down. Make sure you understand why you got the question wrong and make a card [cloze deletion] or [basic] to help you. Cards that compare two similar things are definitely going to serve you well if that's what confused you.

- "After the rote details, the core of USMLE success comes from a thorough understanding of core physiology and pathophysiology. "
    - There is a lot of content at UQ phase 1. However everything will be taught in multiple passes during the week. Your pre-week content review can be cursory because you'll encounter the info again and again. Take the time to really delve deeply into mechanisms of disease, either through Robbins Basic Pathology or Dr. Najeeb videos (really long but very good for neuro and some other basics) or contemporary literature on the topic.
    - Semester 1 and 2 are about building a framework to populate with all of the errata and minute details tested on Step 1. Having a solid framework allows you to retain and utilize the details that you learn as you go.

- "Dedicated is about learning to make the right call. Simulate test conditions (timed random 40 blocks) to find where you are still making errors."
    - Chances are that by dedicated where you are still making errors and getting questions wrong may be in areas that are boring or that you don't like to study. I wish I would have used dedicated time to increase my volume of random time UWolrd blocks instead of focusing myopically on my incorrect answers. One way to target your blind spots that will really hit you on test day is by coming across it in a timed random block. I applied this strategy better in step 2 and noticed the results.

- Don't waste all of your time doing >1000 Anki cards/day in the final weeks before the test. In the last 4 weeks it is sometimes better to taper a little and focus on volume of questions and what choosing the right answer "feels like."

- Beginning a Step 1 study plan can be very intimidating. Though setting aside time to study the content is incredible important, it isn't quite that simple. You have an overabundance of resources you can access, and every student will swear by a different set of them. It can be easy to feel like you are not using the right resources, but I wish I would have trusted what felt most helpful to me and stuck to it, rather than switching from one to the next over the course of two years. This not only increased my expenses, but I felt it took me longer to grasp a concept than if I had just chosen one or two resources to focus on in addition to UWorld questions. Additionally, I would absolutely start UWorld earlier. I had been hung up on the score and was afraid of doing a question bank before I felt confident about the content. But as I prepared for Step 1 and 2, I have learned time and time again that UWorld is a learning resource more so than one to assess your knowledge. The active learning you gain from UWorld or other practice questions cannot be replaced by passive videos. I wish I could tell myself to jump in head first, read the explanations in depth, and learn from them, without worrying about my overall UWorld percentile.

- The single most important thing that I wish I would have done was pick one study method and stick with it. Perhaps the right strategy would have to attempt multiple different resources and then select ones that I liked the most. This meant first trying out different anatomy/physiology/pathology resources, whether it be videos or textbooks or lectures, and then recognizing which ones I liked the most. The way that I selected resources was based on my learning style. I am a very visual learner so I preferred Osmosis over Boards and Beyond, as an example. This will be personal for you and there is not one best method. However, I came across Osmosis and Sketchy in my second year and really regretted not having been exposed to it previously. So my one thing I wish I would have told myself would be to try multiple resources (at first) and select ones that you liked based on your learning styles and do not change resources.

- I wish I told myself to incorporate better balance in preparation for step 1. I think a nice exercise regimen throughout the process would have been very beneficial, instead of at the end where I was experiencing burnout. I also wish I had a consistent study schedule, example, 8 am-5 pm and was stricter about not going over. At times, I would study till late into the night, and I believe that made the following day's study time less effective.

- From a content perspective, I wish I did not spend as much time mastering minutiae and traded that time into doing hobbies like running or hanging out with friends to give the mind a rest. I think the yield on remembering a specific gene or specific enzyme in nucleotide synthesis is fairly small and incorporating a clinically relevant mindset is beneficial for the actual exam and beyond. Towards the end (last month), I believe 90% of time should be

spent doing questions from UWORLD,UWORLD Practice Tests, NBME's to build endurance, practice recall, and develop reasoning skills.

- Retrospectively, in preparation for Step 1, I wish I had spent more time doing Uworld questions and less time doing passive learning such as Boards and Beyond videos or reading First Aid. There is so much information to learn for Step 1, and Uworld helps one quickly delineate what they know and do not know, by directly showing them what they can get right and wrong, accompanied by great explanations. Additionally, I learned that active learning is so much better than passive learning. One of my main comments on students' study plans this year was that they need to incorporate more Uworld questions each day. I aimed for 60-80 questions per day during the school year and then 120 per day once UQ exams were done. Finally, really reading the answers to questions and understanding the answer was also key, as I saw a lot of my peers just skimming the answers for the sake of time.

- The other best tool I used were anki fashcards. Their spaced repetition format allowed one to really engrain topics into memory, and I found myself correctly recalling specific facts, even when I doubted myself. I found myself doing 800-1,000 flashcards per day for most of second year. This was a lot, but it really was the most time efficient way to memorize a huge amount of information in a short period of time.

- I wish I would have known that passing requires dedicated daily commitment to learning. Critically investigate how you learn, and be willing to seek expert advice I had to abandon tactics that weren't serving me and were a waste of time. The process of learning was uncomfortable, exhausting, and never linear, but it paid off.

- I wish I took more breaks. It was hard to appreciate in the moment, and I can certainly relate to those students that put everything they have into scoring high on Step 1. It was my only priority for a full year of my life. Looking back it’s easier to understand that taking breaks was so crucial to my well being. Life’s too short to prioritize anything but that! Especially with it being pass fail, the second you get just one passing NBME score, TAKE THAT TEST and never look back!!!! The real thing is much more forgiving than any practice test I ever took.

- I wish I would have started studying step 1 content early first year. There's enough overlap with the UQ curriculum to make it worth it to study step 1 content exclusively. Use B&B for lectures with accompanying Anki decks as well as Pathoma for basics and Sketchy for Micro/Pharm.

- I wish I knew the value of analyzing and reviewing UWorld questions to make my own Anki decks instead of just relying solely on pre-made Anki cards. I wish I knew the importance of Pathoma. I wish I would have told myself that it was okay to take breaks, and that mental burnout is real and can affect your performance.

- I really wish I started doing practice questions sooner. I think starting a qbank in year 1 would be beneficial and trying to do at least 5-10 questions/day based on the system studied at UQ. I thought I wasn't ready to do practice questions since I didn't know the material well but later figured out how I actually learned material best through practice questions. I also wished I had started doing "exam mode" blocks sooner as they feel different from the study mode where you see the answer immediately

- Don't wait to "learn a topic later" or closer to the exam date. It's ALL about the number of times you review a topic to seal that information in your brain. Stuff like biochem/micro/drugs seems like a good last minute thing to just cover at the end, but just watch the sketchy videos here and there and it'll come up OVER AND OVER so you'll be much more comfortable in the end. Also I WISH I would have known the best way to review UWorld questions. For ME, it was best to copy-paste information I didn't know from the answers and putting them into anki cards. I had a deck that was dedicated to missed-UWorld questions and I just did that daily with my other decks. Hope this helps! The only other thing that really helped me was to keep a good schedule. I had a small goal everyday (30-40 UWorld Questions, 1-2 boards videos, 1 sketchy video, and Anki) and I had a catch up day on Saturdays (I wouldn't study on Saturdays otherwise). Enjoy your last few months of Australia and keep your studying manageable, so you don't get burnt out. The real work comes after Thanksgiving!

- I wish I had started uworld earlier. it helps to study for the UQ exams too.

- Frankly I think the number one thing is to have started UWorld questions earlier. As early as possible really to just engage with the material, even if its only five or ten questions a day during the beginning of year 2.

- Limit number of anki cards during dedicated. Focused on questions more using tutorial mode at first to read all the reviews. Study outside the home and start early every day.

- I would have done more serial revisions of First Aid. In other words, I wish I had used FA as a "cheat sheet" when making study guides instead of studying it like Boards and Beyond slides. I also used Anki, nearly every day, but I didn't seem to realize that a general review of a chapter of FA can add so much understanding to the facts obtained via anki. Put simply, I wish I had used FA as a scaffold instead of a "solutions manual." It turns nearly unlimited packets of discreet knowledge into a realistic number of chunks of information.

- Additionally, when I get a question wrong, I (typically) know what I should have know (or what information belonged there in my brain). Without *several* repetitions of FA, its much harder to gain familiarity with the scope of knowledge required, and thus much harder to assess your progress realistically.