

# Tips for success for USMLE Step 1 and COMLEX Level 1 (2013)

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## General Tips to study for Step 1

- One of the most important things is to adjust your mindset. Think of studying for the boards as solidifying and mastering your knowledge of medicine. You are on a quest to improve yourself as a physician and you are not just tackling a test.
  - DON'T worry about what score you are going to get. If you are simply focused on building yourself up and trying to legitly learn the material (and fyi in my experience it was very useful to know step 1 stuff for wards) and not just as something to learn and forget, you will likely do well.
- It is important to note that step 1 is **not** focused on brute memorization of details (ie. this bug likes to do this and that); it is a **mechanism** and **fundamentals** based test that will sometimes create novel situations to see if you can apply a mechanism or basic you already know. Thus, you will need to learn the basics before you can play the game.
- Utilize pathoma as early as possible (**first year** ASAP) and before every lecture possible as a review. Solidify your knowledge through the lecture, utilizing First Aid and and goljan to identify what is important boards wise in the lecture. Of course, don't neglect what the professor thinks is important too as this clinical information is actually useful on COMLEX (and often on wards) but not as much in step 1.
- When studying topics **not** in goljan or pathoma (anatomy pharmacology biochemistry public health etc), always refer back to first aid (start early; being familiar with the layout of the book early on leads to less anxiety later on!!! Trust me.) and see what they consider as high yield, and try to commit those to memory alongside what the lecturers may emphasize.
  - When studying pharmacology, try to relate mechanisms of drugs to diseases. Ie. abcximab's mechanism is similar to ITP. Taxane and vinca alkaloid neuropathy in the long nerves is similar to that caused by Chediak Higashi since both involve microtubule malfunction in the long nerves.
  - Try to incorporate review of embryology earlier if you can. It's quick during your anatomy studying to look in first aid under the branchial arches/etc and see where certain things develop.
- IMO, topics that connect system to system are high yield because questions have more ways to approach the topic. Although fundamental principles are obvious in this category, sometimes there are less obvious connections →
  - A good way to find connections is to look into the index of first aid or if you have the first aid PDF→ **utilize the first aid PDF's find function** to look up keywords you will be surprised where you find it in other sections. This is how I realized some interesting connections, like how N-acetylcysteine is not only the antidote to acetaminophen toxicity by helping to restore glutathione; it is also a mucolytic used in cystic fibrosis. Niacin is vitamin B3 but it's also used as a anti hyperlipidemic drug. You will be surprised to see how many places alkaline phosphatase shows up.
  - Incidentally, I found the find function was a good way to reintegrate embryology. I found the MEN syndromes in endocrine will make so much more sense when you realize many of the affected organs are from the Neural Crest (RET mutation which deals with neural crest can be in MEN2A means neural crest cells like chromaffin cells turn into pheochromocytoma, etc, and also hirschsprung disease), and when you realize many of the findings in the neurocutaneous syndromes (NF1, etc) deal with ectoderm structures (ie. melanocytes are part of the neural crest, which is part of the ectoderm.
  - When learning anatomy, it helps to look at first aid and review which embryo structures are high yield.
- Certain topics can be tackled in a "chronologic" order. Examples of this:
  - Learn acute inflammation/innate immunity, the APCs as the bridge, then acquired immunity/chronic inflammation. Know where the 1' immunodeficiencies (and cancers) lie along this "timeline"
  - Studying the order which lipoproteins are made; and then learn the lipoprotein disorders in order.
  - Nephritic and nephrotic syndromes; first understand which which side of the filtration membrane is in the blood and which side is filtrate; know the layers (glomerular capillary→endothelium→ GBM→ Epithelium/Podocytes→Bowman's Space), and then learn the diseases based on deposit location. Realize there is a similar layer system in the BBB. Pathoma has another great system for categorizing the nephrotic syndromes.
- It's important to work on your weak areas and difficult concepts early in the board study process (more on this later), and focus on rote memorization topics later on in the study process.
- Check if you know something by trying to teach it to someone else, or by making a flowchart/mindmap/outline; these are among the best ways besides just doing questions.

### How I studied for blocks and boards at the same time:

I touched on this above, but use pathoma to review every topic prior to going to lecture as this will be high yield for boards later. Try to also use first aid and do a quick glance to see what is considered high yield from lecture. Go to lecture (or read powerpoint), and understand what the instructor wants you to know. Supplement lecture studying with goljan's rapid review while you study for the test. Use the lecture, robbin's pathology or other more "legit" source for clarification questions.

Something I liked to do was to challenge myself and **create** a "**big picture**" mindmaps or outlines during this time. These will be very useful when you review **and the active learning of creating a guide for yourself is what helps you the most**. The point is for you to have something quick to review later on when you have forgotten all the minor details; the most important thing is to have a clear organization scheme that gives you a big picture. When creating your mindmap, try your best not to get too bogged down with detail as these things you will forget (it's hard, I was tempted to make very detailed outlines and often did load them with details to be honest)

To challenge yourself and ensure you are learning something, take a blank sheet of paper and attempt to draw your big picture mindmap from scratch; that will prove to you that you really know it. Something I did equally as much was try to teach fellow classmates (you have to know it to teach it), and to encourage my fellow classmates to teach me things too.

### Having fun while studying for the boards?

- 1) Study in a group.
- 2) Share epiphanies with each other; this is always fun (ie. you found a cool connection you want to share. Medicine is also really cool in general; there are a lot of fun things to share with each other.)
- 3) Be legitimately excited about what you're studying; even mechanisms are useful to know in the future. Being able to regurgitate the mechanism isn't the useful part, it's the fact that it helps you remember the manifestations of a disease or side effects of a drug is thus a tool to help you remember the important clinical info (ie. Type I hypersensitivity/Atopic diseases have both an early phase mediated by histamine and a late phase mediated by leukotrienes; antihistamines like diphenhydramine block the early phase and drugs like montelukast block the leukotriene receptor for asthma, which is partially an atopic disease.)
- 4) Have dinner potluck parties. I did this a whole bunch and it was always one of the best ways to lighten up a tough study day.
- 5) Watch an episode of a TV show at dinners! You can afford to kick back.
- 6) Pretty much don't have to say this, but relax after blocks. You deserve it!
- 7) You can take OMT on each other on breaks and maintain your skills. As a side note take the OMT labs seriously, even during your board studying time. We are not just MDs with different letters behind our name. A chiropractor once told me we are "just an MD school with a lower GPA." Don't let him be right.

## 2<sup>nd</sup> Year: Timeline for Boards Studying

The below is **not** a definitive guide but rather written to loosely help you get ideas. I followed a loose organization similar to below during my board studying. I didn't want to follow a strict timeline in terms of studying so I wouldn't agonize if something came up and I couldn't adhere to the schedule. Don't feel like you need to adhere to the bottom at all, you should modify it according to your style (in particular, the below is more for a "review" centered style, while I know some like to start with heavy questions right away).

**Fall:** During the few lulls in studying neuro/msk (ie. those October breaks), try to fit in some review of basics. More on reviewing the basics below.

**Winter break before boards** Try to dedicate at least a week (more depending on how much fundamentals you need to cover) to hardcore review of the basics. Yes this is **super** hard I know, but I know that I was sooo glad that I spent the time to do this because once the spring semester began I was swamped again and didn't have the luxury of time anymore. You can definitely have fun during the break though; I know I did. Just don't completely blow off studying)

There are two criteria I think that qualifies something as important things to study early on vs. later.

- 1) Is it a fundamental principle that is applicable to every system – ie. pathology (especially inflammation; make it a point to know how inflammation works in as many diseases as possible to understand), immunology, physiology. If yes, it's worth to study early on.
  - a. Keep in mind the more things this principle is applicable, the more high yield it is. Ie. inflammation is applicable to many diseases. It is a mechanism central to the pathogenesis of many diseases. Another good example is thrombosis/embolism, as they are mechanisms central to diseases in so many systems.
- 2) Is it something that is difficult to understand, that requires more than just rote memorization? If yes, then It's worth to study early on.
  - a. One of the most important things is to study things that are more difficult to understand/take more thinking like physiology , immunology, and autonomics of pharmacology early on, and leave pure memorization things like micro to the end. That being said, try to learn general principles of micro early (the gram + and gram – chart is a good place to start; as is which bacteria are encapsulated)

Don't try to review the systems in depth just yet (ie. the specifics of a disease like endocarditis) with the exception if there is something really burning you want to review (ie. you didn't know how to study for heme back in semester 1 or didn't use pathoma in semester 1 so you want to go back and review that stuff). Remember that since you've gone through these topics now, your main job is not to just review, but to apply the mechanisms of the basics to the diseases you've learned now.

**Here are some recommended topics (among other fundamentals you should hit)**

- Pathology: Inflammation, cellular adaptation (ie. think of what are the precursor dysplasias prior to development of cancer? Ie. metaplasia to squamous epithelium in the lung as precursor for bronchogenic squamous cell carcinoma). Really, you should hit all of basic pathology again.
  - Again, applying what you know, ie. chronic inflammation occurs after healing of MI (think of the timeline after an MI, also think of chronic inflammation and risks after transplant, and also after a stroke).
  - Learning the basics without applying it again is empty because you will forget them again.

- **Hematology:** Thrombosis, Emboli, etc (think of MI, strokes, DVT, pulmonary emboli, hypercoagulable states like anti phospholipid syndrome, the list goes on. These are very applicable topics.)

**Early Spring (January-early April):** GI, Endocrine, and Repro are very high yield on the boards, and are fortunately integrated with many fundamental principles that you can review at the same time.

**#1: Begin to review biochem, as it can be easily integrated into spring's topics:** Both GI and endocrine have tons of biochem integration points. For example, GI is a great time for you to begin to review biochemistry (that's when I did) alongside GI physiology and pathology. My source for biochemistry review at this time was first aid (and later on I used the biochem section of DIT, which was very good) and my biochem notes from first year. At this point, your goal should be not really to ace the blocks but rather to do well enough on them, and try to do as much board relevant stuff as you can (honestly if you can hit all the board relevant stuff, even if it isn't on the blocks, you are going to do well on the blocks. Just be sure to pick up on some of the high yield clinical material from the lectures). As usual, try to study things that require more thinking rather than rote memorization earlier on.

- Examples of how to integrate biochem into your study
  - GI: When you absorb the nutrients, do you remember how the chylomicrons are formed in the enterocytes and are packaged and how lipoproteins work? You can review step by step the high yield hyperlipidemias too at this point (which ones put you at risk for pancreatitis, and which at risk for early atherosclerosis? Keep in mind you don't need to know all the hyperlipidemias anymore.)
    - For that matter, it's time to review cardio → the hyperlipidemia drugs
  - Endocrine: Diabetes means you can review biochem of insulin and glycogen; along with that you will be reviewing a huge bulk of biochemistry, including glycolysis, TCA cycle, glycogen storage diseases, urea cycle, etc

**#2: Use Uworld whenever you can. It is not only an evaluation tool, it is a learning tool.** Do not be discouraged by your scores initially (or even later on), Uworld should be thought of as a learning tool. You can follow along the topics that you are doing in class in Uworld. I did not keep myself to a set # of questions a week but rather I made it a goal to finish/almost finish the GI uworld questions by the time (or shortly after) the GI block exams roll around. In the end I realized I learned as much from Uworld as I did from first aid; you should annotate your notes or something that you will refer back to in the future with what you learn from uworld. This is a time consuming process so don't feel alone in this.

**#3: Keep a dedicated, concentrated study group and go over the systems, covering difficult topics every week as permitted (usually did not do this the week before a block).** How can you have time to do this? If you simplify the lectures for your blocks into just pathoma, first aid, and goljan, and cut out the other things from the lecture that are lower yield, you will likely find yourself with more time. Again, **DO NOT forget to apply the basics to diseases you learned; this is how you solidify your knowledge (ie. after going over cv and renal physiology, review mechanism of heart failure and correlate it to the PV loops, etc).**

- Suggestions: Cardiovascular physiology (always important), Renal physiology (but most importantly Acid base physiology). Respiratory physiology too (be sure to know hypoxemia vs. hypoxia; super important and pathoma does a good job of covering this in one of the early path videos).
- Review autonomic physiology again (which receptor does what; this is so high yield and I'm thankful Dr. Gayer made us hit this so much).
- As far as embryology is concerned, you should focus on embryology that is more high yield; this includes formation of the heart and linking those to the congenital heart malformations.
- Immunology is an important topic to review. Remember "immunology" is all that happens after acute inflammation, after the antigen presenting cell (dendritic cell, macrophage, or B-cell) presents to a Naïve T-cell.

Immunology is important because many diseases involve chronic inflammation, aka all the autoimmune diseases.

- Public health, particularly sensitivity and specificity, positive predictive value, negative predictive value. This was a difficult topic for me so I had to hit it early.
- Do some basic review of micro, including the gram + and gram – chart if you haven't yet. Understand basic principles of micro like transformation, transduction, these things are a little more difficult to understand. A good specific of micro to touch on (and integration into immunology) is which immunodeficiencies predispose you to which bugs (there is a chart in immunology in first aid about this)
  - Ie. Humoral deficiency (no antibodies) or asplenia → **vulnerable to encapsulated bacteria**
- (Hint on group review; what I did was a teaching style where everyone had to be good enough to teach a particular subject, but you can also do a Uworld question session with review)

**Late Spring (~Late march/early April to June/Exam time)**: Class material now should be doing repro now and also genetics/congenital malformations.

- 1) Add in things that are more rote memorization into your routine, like drugs and micro, and biochem enzymes, embryology.
  - a) Be sure to stay motivated by studying in a group.
- 2) Finish up reviewing any straggling “difficult” topics for yourself.
  - a) Remember the best way to know if you know it is to try to teach someone.
- 3) **FINISH UWORLD!!!** This cannot be stressed enough. I only finished Uworld once, some people finish it twice. BUT the most important thing is to FINISH UWORLD!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! This really cannot be stressed enough. Unfortunately, some people never finished Uworld and I believe this hurt A LOT.
  - a) I finished Uworld about 1 week before step 1; this is because I spent a lot of time annotating what I learned in uworld into my notes or trying to apply uworld stuff elsewhere.
    - i) Some people I knew finished it way earlier because they didn't do that, but just liked to do questions to reinforce. This is up to your style (go through uworld multiple times? Or go slower and go through it once. Up to you.)
    - ii) I know that many people like to do a ton of questions instead of studying; feel free to do this but it just wasn't my style.
  - b) Some people like to use the evaluation exams early on; I waited until the last 2 weeks to do them. This depends totally on our style.

## Sources I used and my thoughts

- 1) First aid, goljan, pathoma, uworld: use them all, enough said. Remember to not take Uworld as an evaluation tool but rather as a learning tool, don't be discouraged by your scores at all as you are really identifying things you can learn. You will probably learn just as much from Uworld as you will from first aid!!
  - a. I used 6 month Uworld and began in January.
- 2) Lecture material. Don't forget that some of your professors have put in the work to make board review documents for us; some of them were very useful.
  - a. NOW is the time also for you to look back at those mindmaps you made. A lot of them will be very useful; I know it was for me!!
- 3) DIT: I used DIT 2013 (bought it), I thought it was very focused on rote memorization of buzzwords.
  - a. This means it was good for: Embryology, Biochemistry and pharmacology. IMO it helped a TON with these topics, and *almost* makes me say it was worth it.
    - i. Also, the public health section was pretty good imo.
  - b. This means it was BAD for: pathology, physiology, anything that requires deeper understanding.
  - c. **If you do decide to do DIT; do it AFTER you finish pathoma**. This is because DIT doesn't explain "why" very much. I began using DIT's system based videos (the one you use the book it comes with) I think in March or April? I forgot to be honest; but this is really up to you; HOWEVER don't activate it too late; this will leave you with NOT ENOUGH TIME to do uworld, the #1 mistake!
  - d. Overall I would not recommend getting DIT as your primary source because it was too focused on rote memorization; however I will say it is VERY helpful for the topics that do require the rote memorization.
- 4) Lange Pharm Cards: OK source; I didn't get as much use out of them as I thought
- 5) Clinical Micro made Ridiculously Simple: I used this personally along with First Aid's Micro section, I thought it helped a lot alongside NGR to read something that was funny and memorable. I really liked it personally but you can probably forgo it if you don't want to spend the money.
- 6) HY Neuroanatomy: Absolutely amazing while you're going through Neurology to keep you focused on what is important. Also great for a refresher later on, although it does go into details that you don't need to know still. Overall, a very worthy purchase.
- 7) Costanzo Physiology: The bigger version of BRS physio; I used this personally to study for physiology starting in spring (GI endocrine and repro) because I like physio a lot but I've heard BRS physiology is amazing.
  - a. You will have to supplement the repro section with Dr. Wong's notes and first aid to get a full picture; it is not very strong in Costanzo but still gives a good overview.
- 8) Savarese: A really good OMT review book that I think should be used to review alongside your course OMT material; nobody else I knew did this but I thought it helped me get a sense of what was board relevant.
- 9) Kaplan Q-Bank: I didn't use it too much myself but I did borrow a friend's access; I found that the questions were good but a bit too in depth (a bit too nitpicky sometimes) for simulating the USMLE. As a result, my recommendation personally would be to go through Uworld twice rather than to do Kaplan and then Uworld. If you do use Kaplan, it really is only a learning tool and not an evaluation tool.
- 10) USMLE Test Weapon: This is an okay question bank but I felt that it was not in depth enough compared to Uworld. That being said, there are definitely some good questions; it just isn't as established as Uworld is so there aren't as many.

## My thoughts on COMLEX Level 1

- 1) After I took this exam it confirmed for me that our curriculum is definitely more geared for COMLEX, which is more clinical. It integrates slightly more primary care things that are less mechanism based; ie. I had a question on SCFE which you learn in class but is not until step 2 USMLE.
- 2) Micro is very high yield on comlex.
- 3) Expect to get some things you've never heard of on COMLEX (ie. bacteria you've never heard of).
- 4) I gave myself 4-5 days after step 1 to take COMLEX which I felt was enough. Our OMM curriculum does a good job at preparing us for the OMM portion; you just need to mostly review the viscerosomatic reflexes and certain things like thoracic outlet syndrome etc.
- 5) Doing Uworld did cover a lot of what was on the COMLEX and I feel that in the 4-5 days of doing COMBANK, I was able to cover enough questions to get me used to the style and also to

I humbly thank everyone for reading this guide. Utilizing what I said above, I was able to do very well on both USMLE and COMLEX. I hope that these tips will serve you well! If you have any questions, feel free to email me.

- Eric Lau, COM2015