

# COMLEX-USA & USMLE

A Comprehensive Guide to Preparing For Your Medical  
Board Examinations

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Michigan State University College of Osteopathic Medicine

**Academic and Career Advising**

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## Overview

### What Is the Purpose of Medical Board Examinations?

First and foremost, the purpose of board examinations is to protect the public, especially patients, from incompetent physicians by assessing a standard minimal level of competence in the knowledge, skills, and attitudes of physicians-in-training.

### When Are the Exams Taken?

Both COMLEX and USMLE are exam sequences (COMLEX = 3 Levels; USMLE = 3 Steps), with two levels/steps taken during medical school, and the third taken after graduation, usually at or near the end of the first post-graduate year (PGY-1). MSUCOM *requires* all students to take COMLEX Level 1 prior to entering the Clerkship. Level 2 (both Level 2CE and Level 2PE) are then taken, at the student's discretion, at some point near the end of the 3<sup>rd</sup> year or early in the 4<sup>th</sup> year, generally upon completion of the core rotations. COMLEX Levels 1-3 must be taken in sequence and each level must be passed to be eligible to take the next level in the series. In contrast, USMLE Steps 1-3 can be taken out of sequence.

### Why Is It Important That You Take the Exams Seriously and Do Your Best?

Passing COMLEX Level 1, Level 2-CE, and Level 2-PE is a graduation requirement for all MSUCOM students. While a passing score of 400 is all that is required, MSUCOM students are encouraged to aim for above 500, preferably much higher, to optimally position themselves for residency. Furthermore, low scores can pose difficulties down the road. For example, if named in a malpractice suit, during a trial, an attorney for the plaintiff will not hesitate to raise the issue of a defendant's poor or below average exam scores.

### COMLEX Level 1 scores used to screen residency applicants

Although the primary intent of board examinations is to protect the public, residency programs are increasingly using board scores to screen applicants. Many residency programs have "cut scores" below which they will not consider an applicant for an interview; therefore, performance on COMLEX can be a limiting factor in obtaining a desired residency position. The extent to which residency programs utilize board scores varies. To best position oneself to be a competitive candidate, it is important to obtain as high a score as possible.

### What Is the Best Predictor of Board Performance?

The best predictor of COMLEX Level 1 performance is MSUCOM course performance. Students below the 20<sup>th</sup> percentile in their overall class rank have a substantially elevated risk for not passing their COMLEX Level 1 exam on the first attempt (Sefcik et al., 2012). This MSUCOM finding is consistent with other published research (Baker et al., 2000; Coumarbatch et al., 2010). ***The vast majority of MSUCOM students who fail COMLEX Level 1 are below the 20<sup>th</sup> percentile in their overall class ranking.*** Other risk factors include poor past performance on other standardized tests (e.g., MCAT); obtaining a poor or borderline score on the COMSAE Phase 1 (the NBOME practice exam for Level 1) within one month of test date; underdeveloped study, time management, and test-taking skills; certain personality factors that influence learning; excessive test anxiety; and self-perception as a "bad standardized test taker."

### What Are the MSUCOM Policies Regarding COMLEX?

In addition to the graduation requirement, MSUCOM has policies regarding when Level 1 is taken, consequences of failing, and how many attempts are allowed. For specific policy language pertaining to the COMLEX exams, please refer to the appropriate [MSUCOM Policy for Retention, Promotion, & Graduation](#).

# What Every Student Should Know about Board-Style Questions

## Anatomy of a Board-Style Question

Board-style questions are *higher-order questions* often requiring two or more inferential “steps” in order to answer the posed question. The vast majority of board items have two main components:

1. **Question Stem**—consisting of two parts: patient vignette + lead-in
  - a. The patient vignette is the clinical scenario
  - b. The lead-in is the last sentence and represents the actual question being asked
2. **Answer Options** (a.k.a., alternatives)—includes one *best* answer plus 3 or more inferior options or distractors

In the generic examples below, note that the distinction between a lower order and a higher order question does not necessarily involve the amount or type of information provided in the vignette, but rather the question posed by the lead-in. Any given vignette could potentially have multiple different lead-ins.

Lower Order	Higher Order
Vignette: A (patient description) has (history findings) and (signs and symptoms). Lead-in: Which of the following is the most likely diagnosis?	Vignette: A (patient description) has (history findings) and (signs and symptoms). Lead-in: Which of the following is the most likely pathological mechanism responsible for this patient’s condition?

## How to Approach a Board-Style Question

Successfully tackling a board-style question requires content knowledge, certainly, but also strategy and clinical reasoning skills. By following these simple steps, you can begin to master board-style questions.

1. Though it may seem intuitive to begin at the beginning of the question and read the entire vignette, it is more efficient, especially for long items, to first read the “lead-in”—the actual question—and scan the options. Then, start at the beginning and *read the vignette thoroughly*. Lastly, re-read the lead-in to make sure you understand what’s being asked.
  - a. In contrast, while studying it can be good practice to use a “cover the options” strategy to better test your understanding and recall; however, on the actual exam, reading the lead-in and options first will better prepare you to properly sort the information provided in the clinical scenario.
2. Once you’ve read the lead-in and the options, use clinical reasoning skills to sort and categorize the information (history, signs, symptoms, test results) provided in the vignette to create a brief summary or “impression,” referred to as the *problem representation*<sup>1</sup>. This is particularly important for long vignettes because short-term (working) memory is only capable of handling a small number of information items for a brief period. During the exam, it could be useful to jot these things down on the provided scrap paper or white board. Pay particular attention to details that allow you to compare and contrast:
  - a. When possible, summarize using words drawn from paired, opposing descriptors, such as, abrupt v. gradual onset, acute v. chronic, mild v. severe, stable v. unstable, increasing v. decreasing, elevated v. low, multiple v. single involvement, symmetric v. asymmetric, discrete v. continuous, etc.
  - b. Identify pertinent features:
    - i. Defining features: descriptors that are characteristic of the possible options
    - ii. Discriminating features: descriptors that are useful for distinguishing among options
    - iii. Pathognomonic features: though relatively uncommon, these findings (signs, symptoms, test results) are uniquely and distinctively characteristic of a particular

“When picking facts to learn from a long list of tidbits, pick the ones that help distinguish a diagnosis from other likely/related answer choices.”

<http://www.benwhite.com/medicine/ab>

diagnosis, i.e., they are “diagnostic” (have high specificity though *not* necessarily high sensitivity)

3. Always make sure you’ve selected the **best** option and not just the first plausibly correct option you see.
4. Don’t assume the question is trying to trick you. More than likely, if there seems to be an “obvious” choice, it is truly the best option.
5. Remember, all the information you need is in the stem. You may need to make inferences based on that information, but you should not need to make assumptions about other possible case or patient details. If you feel that an important piece of information is missing, then it is *not needed* to answer the question.
6. If you’re stumped, try to identify the underlying scientific concept (e.g., mechanism) that is addressed by the question, eliminate as many inferior options as possible, take your best guess, and move on.

## Board Question Guidelines

As a test-taker it can be helpful to have insights into the “test-maker.” Test item-writers are provided training and guidelines and their submitted test items are then subjected to a rigorous vetting process before being included as a scored item on an actual exam. This process includes content review by experts, proofreading for grammatical and other types of errors, and psychometric testing. Every COMLEX exam includes some number of non-scored “pilot items” that are undergoing psychometric evaluation for future use. Below is a sampling of the guidelines provided to item-writers:

- Questions should assess application of knowledge, not recall of facts.
- Content should be universally accepted as correct, appropriate for 2<sup>nd</sup> year medical students, verifiable with a standard medical publication, and represent the current standard of care (not “cutting edge”).
  - For Level 1 / Step 1, students should be able to answer the question based on their **understanding of basic science**; patient care *experience* should not be required.
- Items should focus on common or potentially catastrophic problems, not atypical presentations or rare conditions (“zebras”).
  - Clinical situations should *not* be geared toward those that would be handled by (sub)specialists.
- Patient vignettes should contain all or some of the following categories of information: presenting problem of patient, history (including duration of signs and symptoms), physical findings, results of diagnostic studies, initial treatment, subsequent findings, etc.
  - The trend is for many of the vignettes to be fairly long (>100 words), which means they take longer to read, provide more data to process, and may present more complicated scenarios.
- Vignettes should avoid including truly misleading information (“red herrings”) but could potentially contain extraneous (unnecessary) information.
- The lead-in should be sufficiently focused to allow the test-taker to pose an answer without looking at the options.
- All answer options should seem plausible to someone who doesn’t fully understand the significance of the information provided or is unable to make the inferences needed to draw the appropriate conclusion.
  - Board questions require selection of a single, **best** option from among less good, but also correct options.

## A Few Reasons Why Board Exams Feel More Daunting than Comprehensive Final Exams

- Breadth of content can lead to feeling overwhelmed by the volume of information that must be learned
- Length of exam is intimidating and can lead to mental fatigue
- Timed exam and question length can pose extra difficulty for slow readers
- “Mixed” subject question blocks eliminates useful contextual information available in course exams

- High exam stakes leads to increased anxiety about consequences of poor performance

Successful preparation involves:

1. Developing and following a structured, comprehensive study plan which covers the topics that will be examined.
2. Completing board-style practice questions in order to:
  - a. Learn content and identify areas of weakness,
  - b. Build test-day endurance by gradually increasing the number of questions completed during “mock exams,”
  - c. Become accustomed to “not knowing what’s coming next” by completing mixed question blocks, and
  - d. Gain confidence in one’s mastery of content and test-taking skills through experience.

“You should almost want to get questions wrong, because then it means you have an opportunity to improve, a potential blind spot to weed out. There are lots of reasons to get questions wrong and you need to approach the explanations as a chance to learn, not a chance to be disappointed.”

## The “Marathon” Analogy

It is often said that preparing for board exams is like training for a marathon as both involve:

1. Building “mileage” gradually over time. [Mileage = content knowledge]
2. Adjusting to long distances by completing a “long run” every 7-10 days. [Long run = completing simulated exams with high number of questions]
3. Increasing “speed” through interval training and tempo runs. [Speed = information processing time]
4. Incorporating rest and recovery into training regimen. [R&R = breaks from studying]

The marathon analogy helps put things into perspective: studying for boards is a gradual process that cannot and should not be rushed!

## COMLEX Level 1

### Description of the Exam

COMLEX stands for Comprehensive Osteopathic Medical Licensure Examination. According to NBOME, “The COMLEX-USA examination series is designed to assess the osteopathic medical knowledge and clinical skills considered essential for osteopathic generalist physicians to practice medicine”. Within that context, candidates are expected to employ osteopathic philosophy and principles to solve medical problems presented as clinical vignette style questions.

Exams are constructed from a blueprint that includes two dimensions. Dimension 1 is “The Patient Presentation.” Questions are posed as clinical vignettes of varying lengths that present different types of relevant patient and clinical information, including patient demographics, patient history, and pertinent findings (e.g., from physical exam, labs and/or imaging tests). Many questions include either radiographic or pathological images. Patient presentations are based on “high-frequency and/or high-impact health issues that osteopathic generalist physicians encounter in practice.”

Dimension 2 is “The Physician Task,” which specifies the steps that must be undertaken to solve the medical problems, such as understanding the underlying basic science, correctly interpreting history and physical exam findings, making a diagnosis, developing a treatment plan, etc. It should be noted that COMLEX Level 1 is specifically geared toward knowledge and clinical problem-solving skills that would be acquired during the first two years of medical school; hence, **75% of the exam questions require students to apply their “scientific understanding of health & disease mechanisms.”**

For a thorough description of the exam, refer to the [NBOME COMLEX Bulletin of Information](#)

### Format and timing of the exam

COMLEX is given over a single 8-hour day divided into a 4-hour morning session and a 4-hour afternoon session separated by an optional 40-minute lunch period. The lunch break does not count against your time, but any unused time will not be added to your total exam time. Each 4-hour session is composed of

4 hour-long blocks of 50 questions (400 questions over the course of the day). The testing center provides one 10-minute mid-morning break and one 10-minute mid-afternoon break. These breaks are optional and do count against your total time. Students are often tempted to skip the breaks or lunch period and push through the exam non-stop, beginning to end, but this is not recommended. Students can advance through the 50-question blocks at their own pace; however, there is no ability to return to a previous block of questions after advancing to the next. It is highly recommended that students familiarize themselves with the testing format by exploring the resources provided on the NBOME website.

### Very useful resources:

[Test Day Tips](#)

Video – Prometric: [What to expect on test day](#)

[COMLEX Practice Exam](#) (use to gain familiarity with the computer-based testing):

### Scoring

According to NBOME exam score reports become available in the student’s account at “View Score Report” approximately 4 to 6 weeks after the exam date. **Three-digit standard** scores for COMLEX Level 1 are reported with a mean of 520 and a minimal passing score of 400.

For more information on [Score Interpretation](#)

### Test blueprint

Students are strongly encouraged to become familiar with the test blueprints published by NBOME on the website

## What Resources Are Available for COMLEX Level 1 Preparation?

There are too many COMLEX and USMLE resources for any one person to utilize; don’t feel compelled to collect them all. Instead, explore what is available and select those that cover the topics *you* need to learn in a way that grabs *your* attention. Listen to others’ recommendations, but base your decisions on factors relevant to you, such as your learning style preferences (visual, verbal/written words, auditory) and weak content areas, etc. If a respected peer recommends some great pathology lectures, but you are not a good auditory learner, then that may not be the best resource for you. Attempting to study from too many sources can lead to bouncing around, lack of focus, and important topics falling through the cracks.

Commercial review courses: pros and cons

Will you be better served by taking a commercial review course or by independent study? The “pros” of self-study are that it’s cheaper, flexible, and more likely to reflect your own “style.” The “cons” are more complicated. Furthermore, your own style may be sub-optimal when preparing for board exams. One good clue—how was your academic performance during the first two years of medical school?

If you had poor academic performance or if you tend to be disorganized, have a hard time sticking to a schedule, or procrastinate, then a commercial review course is a viable option. On the other hand, if you are an organized, disciplined student who has earned strong grades, then independent study is more likely to be a good fit.

If you are leaning toward a commercial review course, take your time to select the right one. Some programs are fairly rigid in terms of when you can or cannot finish things; while other programs allow you work at your own pace, i.e., do more when you have time and do less when you are busy. Also, be aware that the best outcomes come from programs that devote some time to teaching test-taking skills. Evaluate carefully all programs and their features, and beware of scare tactics (e.g., if you buy today, you’ll get this price, but if you wait until tomorrow, the price will double).

[Boards Boot Camp](#)

[Doctors in Training \(DIT\)](#)

[Kaplan Test Prep](#)

[Northwestern Medical Review](#)  
[Board Vitals \(FREE with NETID\) from MSU Libraries](#)  
[Firecracker](#)

## Review Books & Resources

Any/all review books for COMLEX Level 1 and USMLE Step 1 are potential candidates, and there are many to choose from. To reiterate a previous point, you need to select review books, or other resources such as flashcards, multimedia, etc., *that work for you*. Ask around and explore before you buy.

- First Aid for USMLE Step 1 – chock full of facts and mnemonics, **but** encourages rote memorization – should be supplemented (not a stand-alone resource)
- medEssentials - provides in-depth review with a focus on high-yield topics – a comprehensive approach that will help you deepen your understanding while focusing your efforts where they'll count the most. \*Free for MSUCOM Students in the Class of 2019—2022\*
- Step-Up to USMLE Step 1: A High-Yield, Systems-Based Review for the USMLE Step 1 – this is a First Aid competitor; explore both and pick the one that is more appealing to you
- USMLE Step 1 Secrets – case-based (clinical vignettes with Q&A) review
- First Aid Cases for the USMLE Step 1 – case-based (clinical vignettes with Q&A) review
- Rapid Review Series – basic science discipline reviews
- BRS (Board Review Series) – basic science discipline reviews
- Clinical Microbiology Made Ridiculously Simple
- Lippincott's Illustrated Reviews – anatomy, pharmacology, microbiology, biochemistry
- OMT Review by Savarese – the gold standard OMM review book (“the green book”)
- [Pathoma](#) – Fundamentals of Pathology
- [SketchyMedical](#) – Microbiology, Pathology, & Pharmacology

## In Person Review Sessions

### Board Q and A Practice Sessions

- Every Tuesday 5-6 pm (check the [student events calendar](#) for more information)
- Weekly group practice and discussion of Q- Bank questions in a safe environment - in other words you can actively participate or just listen to the discussion. Emphasis is on pattern recognition and how to understand the clinical context in the stem of a board-style question.
- Open to all students (any class year)
- Facilitated by Dr. Jane Gudakunst

## Question banks (Q-banks)

	<ul style="list-style-type: none"> <li>• COMLEX and USMLE Qbank</li> <li>• 5000+ questions</li> <li>• Video lecture series</li> <li>• OMM lecture series</li> <li>• 1 Diagnostic Exam used to create a detailed study plan</li> <li>• 2 Full-Length USMLE Simulated Exams</li> <li>• 1 Full-Length COMLEX Simulated Exam taken during Ethics Course</li> <li>• Mobile Companion App</li> <li>• References to FirstAid, MedEssentials, and Pathoma</li> </ul>
<p><a href="#"><u>COMBANK</u></a></p>	<ul style="list-style-type: none"> <li>• Assess strengths and weaknesses with analytics</li> <li>• Active learning methods to develop problem-solving skills</li> <li>• Additional OMM</li> <li>• Learn to think like a test-writer</li> </ul>
<p><a href="#"><u>COMQUEST</u></a></p>	<ul style="list-style-type: none"> <li>• Targeted question bank authored/edited exclusively by licensed osteopathic physicians</li> <li>• Medical jurisprudence issues written by medical law and ethics experts</li> <li>• High-yield OMT topics written exclusively for COMLEX preparation</li> <li>• Customizable program menu - reinforce your learning in the right places</li> <li>• Premium-quality COMLEX programs endorsed nationwide by osteopathic medical school administrators</li> </ul>
<p><a href="#"><u>usmleRx</u></a></p>	<ul style="list-style-type: none"> <li>• Companion to First Aid with explanations that tie directly to facts in <i>First Aid for the USMLE Step 1</i></li> <li>• 2500+ USMLE-style questions written by high-scoring students</li> <li>• Tests are customizable by difficulty, general principles, and systems</li> <li>• Both tutorial and timed testing modes</li> <li>• Detailed performance feedback</li> </ul>
<p><a href="#"><u>USMLEWORLD</u></a></p>	<ul style="list-style-type: none"> <li>• Assess student's basic science knowledge with 2000+ high-quality, unrepeated multiple choice board-type questions by real-life physicians</li> <li>• Detailed explanation and educational objective for each question with excellent illustrations and charts that are easy to read and interpret</li> <li>• Board simulated interface software features (highlight, strike-out annotation, searchable lab values, calculator, mark/flag items etc.)</li> <li>• Suspend and resume a test at any time at your convenience with 24-hour account web access</li> <li>• External references to medical journal abstracts</li> <li>• Mobile companion app available for iOS and Android based devices</li> </ul>

### Example of one possible approach to selecting resources:

1. Select *either* First Aid *OR* Step-Up for a quick reference and high-yield facts, **and**
2. Select *either* USMLE Secrets *OR* First Aid Cases for a case-based presentation of information, **and**
3. Select a more detailed basic science review resource for your weakest subjects and/or Pathology, Physiology, Pharmacology, and Microbiology, **and**
4. Select an OMM/OMT review resource, **and**
5. Select one or two Q-banks

## Semester-By-Semester Timeline for Preparation

What should you do during Semesters 1 & 2?	<ul style="list-style-type: none"> <li>✓ <i>Focus on your coursework</i></li> <li>✓ Actively seek to improve studying / learning, time management, &amp; test-taking skills</li> </ul>
What should you do during Semesters 3 – 5?	<ul style="list-style-type: none"> <li>✓ <i>Focus on your coursework</i></li> <li>✓ Continue to hone your studying / learning, time management, &amp; test-taking skills</li> <li>✓ Get organized</li> <li>✓ Select and purchase your study resources and Q-banks</li> <li>✓ Familiarize yourself with the COMLEX blueprint</li> <li>✓ Consider incorporating board review materials, such as SketchyMedical, First Aid, usmleRx, and/or Pathoma into your course study</li> </ul>
What should you do during Semester 6?	<ul style="list-style-type: none"> <li>✓ <i>Focus on your coursework</i></li> <li>✓ Meet with an Academic Advisor</li> <li>✓ Schedule your test date</li> <li>✓ Assess your baseline knowledge with COMSAE or a Q-bank practice test</li> <li>✓ Develop a study schedule</li> </ul>
What should you do during Semester 7?	<ul style="list-style-type: none"> <li>✓ Follow your study schedule; adjust as needed</li> </ul>

### When Should You Take COMLEX Level 1?

COMLEX Level 1 **must** be taken prior to entering Clerkship. Most students opt to take the exam during the **latter half of June**, following completion of the 2<sup>nd</sup> year coursework. Students are eligible to take it anytime from the end of May through June, as long as it is taken prior to starting in the Base Hospital. Students are advised against taking it too early to “get it over with.” It is important to be as prepared as possible to minimize the risk of not passing on the first attempt.

### How Should You Prepare for COMLEX Level 1?

Preparing for COMLEX is *project management 101*. Getting ready for the exam is a temporary endeavor that is bounded in time – it has a beginning and an end date. Successful preparation includes determining needs (e.g., what skills need to be developed?, what content needs to be learned?), setting goals, planning, identifying and managing resources, anticipating and mitigating obstacles, creating a realistic timeline with checkpoints, performing activities/tasks necessary to achieve the goals (e.g., studying material, doing practice questions), evaluating progress toward the goal (e.g., taking practice tests), making adjustments to the plan as needed, and maintaining motivation and commitment to the desired outcome (e.g., achieving a score over 500).

Avoid common mistakes when preparing for Level 1:

- **PASSIVE** study methods
- **INSUFFICIENT** practice with board-style questions
- **MEMORIZING** as opposed to understanding the material
- **INAPPROPRIATE** test day strategies
- **MISREADING** or misinterpreting questions

### Self-assessment

An initial step to successful preparation is self-assessment (obtaining a performance baseline). This serves three useful purposes: (1) It will help you determine your study priorities (i.e., identify needs). By comparing your baseline assessment with the COMLEX Blueprint you can ensure that you spend an adequate amount of time on the “right” material. (2) It will help you to identify needed resources, such as purchasing review books that cover specific “weak” content areas (e.g., microbiology, pathology, or pharmacology). (3) Determining your baseline performance will allow you to better gauge whether or not your study plan is working. You should see an improvement in performance over time. This will allow you to make a more objective determination of progress.

## COMSAE-Phase 1

COMSAE stands for Comprehensive Osteopathic Medical Self-Assessment Examination. These practice tests are provided by the National Board of Osteopathic Medical Examiners (NBOME) for use by students to gauge their knowledge and problem-solving skills and develop familiarity with the COMLEX format to aid in preparation for the real thing. Question banks, such as USMLE-Rx, USMLE World, COMBANK, or COMQUEST can also be used to self-assess baseline performance and progress over time.

The advantages of using COMSAE are (1) the makers of COMLEX developed it, (2) it represents a style and format that is very similar to the current version of COMLEX, and (3) the scores are reported in the same way as COMLEX. Disadvantages include limited feedback, cannot review missed questions, cost per version, and a limited number of different versions. Multiple versions are available for purchase at a cost of \$60 each. [COMSAE Phase 1](#), like COMLEX Level 1, emphasizes scientific understanding.

It is an MSUCOM requirement that all students must sit for one (possibly more) COMSAE exam prior to being eligible for COMLEX Level 1. The COMSAE(s) will be administered during semester 7 and each student must attain a score of 450+ before being eligible to sit for COMLEX Level 1. If a student does not attain a score of 450+ on their first attempt, they will be permitted one more attempt during semester 7 to receive the score. If they do not meet the 450 cut off score on their second attempt, the student will be put on academic leave from the college. More information can be found in the [MSUCOM Policy for Retention, Promotion, & Graduation](#).

### Interpreting your results

Your COMSAE results ([performance profile](#)) will include a 3-digit score and a rating of your performance (poor, borderline, acceptable, good) in areas related to: Dimension 1: Patient Presentation and Dimension 2: Physician Task. Sample performance profile: Poor performance = score lower than 350

- Borderline performance = score 351 – 450
- Acceptable performance = score 451 – 550
- Good performance = score higher than 550

### Using your results to guide your review

Whether you take COMSAE to obtain your baseline performance or take it closer to your actual test date, you can use your score to help guide your review.

- Look at the [Test Blueprint](#)
- Compare *your* performance in each area with its relative weight on the Level 1 exam (% of questions).
- If your score is “poor” or “borderline” in areas with high percentages of Qs consider these HIGH PRIORITY items for your review.
- Because the majority (75%) of COMLEX Qs test your knowledge of scientific mechanisms, if your score is “Poor” or “Borderline” in any basic science discipline (anatomy, physiology, biochemistry, microbiology, pathology, pharmacology, behavioral science, omm/opp), review that discipline thoroughly.

For COMSAE to be a reasonable predictor of COMLEX performance, it must be taken as a timed exam under simulated testing conditions (i.e., **not** working at a leisurely pace, pausing the exam, or looking up answers). NBOME reports that performance on COMSAE, when taken as a timed exam, is strongly correlated with COMLEX performance. **If you do not obtain a COMSAE score >400 within 10-14 days of your test date, contact an advisor in the MSUCOM Office of Academic and Career Advising to determine your best course of action.**

<a href="#">CramFighter</a>	<ul style="list-style-type: none"><li>▪ A tool used to create a study schedule from study resources</li><li>▪ Specify study hours so you know exactly what to do EVERY day</li><li>▪ Flashcard Support</li></ul>
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## Creating a study schedule

The next critical step in successful preparation is creating a realistic and detailed study schedule. Make a study schedule and stick to it, but also revise as necessary if the plan does not seem to be working, for example, if your scores on practice tests do not seem to be increasing over time or if you are unable to maintain the pace that you set for yourself.

### Sample Study Plan 1:

#### Advisor Created: Sample 6-Week Intensive Comprehensive Board Review Plan (Pages 13 - 25)

##### This Sample Board Review Plan

- Represents a 6-week, 42-day comprehensive review
- Involves 6-10 total study hours (TSH) per day
- Maintains forward momentum, e.g., no dwelling on one topic at expense of others
- Utilizes a reasonable number and variety of resources
- Establishes a daily routine, i.e., the general flow of each day is structured similarly
- Varies activities throughout the day—humans have a short attention span; attention and focus are enhanced by switching from active reading (reading combined with note-taking/charting/diagramming/concept mapping) to completing practice questions and taking frequent breaks
- Incorporates regular study breaks
  - 10-minute breaks at the end of each hour
  - Longer breaks near the end of the day on longer days
  - Regular meal times
  - Some evenings off
  - Entire days off at regular intervals for R&R
  - Entire day off before test day
- Utilizes practice questions in a variety of ways
  - Timed mode, single subject: Pretest – Posttest (with content review in between)
  - Single subject tutorial mode for learning content and building confidence
  - Mixed subjects tutorial mode (all disciplines, all systems) for practice with mixed question pool
  - Timed, multi-subject “practice exams” to develop test-taking proficiency
- Builds length of practice exams over time to increase endurance
- Incorporates a simulated full-length exam 7-10 days prior to test day
- Incorporates a review of weak subjects during last week
- Incorporates regular, daily review of micro and pharm

##### Topics Covered

###### Review of General Principles

1. Behavioral Science
2. Biochemistry
3. Molecular Biology, Genetics, and Cell Biology
4. Immunology
5. Microbiology
6. Embryology
7. Physiology
8. Pathology
9. Pharmacology / Therapeutics
10. Osteopathic Manipulative Medicine / Osteopathic Principles and Practice (OMM/OPP)

###### Review of Organ Systems

1. Nervous System

2. Cardiovascular System
3. Respiratory System
4. Renal and Urinary System
5. Gastrointestinal System
6. Endocrine System
7. Reproductive System
8. Musculoskeletal System, Skin, and Connective Tissue
9. Hematologic and Lymphoreticular System

### Resources\*

- Kaplan medEssentials
- Kaplan Qbank
- USMLE Step 1 Secrets (page numbers are for 3<sup>rd</sup> edition, 2013)
- Pathoma—Fundamentals of Pathology (page numbers are from the 2011 edition)
- Savarese OMT Review
- SketchyMicro
- SketchyPharm

\*There are many good resources to choose from; these are not necessarily “*the best*.” This plan utilizes Kaplan because it was provided by MSUCOM. Kaplan medEssentials is similar to First Aid, which would be a reasonable substitution. The Kaplan Q-bank has both COMLEX and USMLE style questions. A combination of UWORLD and COMBANK (or COMQUEST) would be a reasonable substitution. Though many students find SketchyMicro and SketchyPharm helpful, not all do. Other resources include various commercial flashcards and Clinical Microbiology Made Ridiculously Simple. USMLE Secrets may not show up on many lists of commonly used or “must have” resources; however, whenever we have recommended it to a student, they have given it rave reviews for its high-yield case-based reviews. Bottom line: choose the resources that make the most sense to you based on learning preferences, availability, affordability, etc.

### Overview of Study Plan

Days 1 – 7: The first week of the study plan provides an intensive review of basic science core principles to ensure a solid foundation. Each day begins with a “warm-up” of 15 subject-based questions completed in tutorial mode to ease into the day and begin to build confidence in the subject. Each subject review begins with a “pretest,” followed readings from review books, and ends with a “posttest.”

Day 8: The basic science review concludes with a mixed disciplines practice exam.

Days 10 – 33: The second portion of the study plan provides a systems-based review with 2-days allotted per system. As before, each day begins with a 15-question “warm-up” completed in tutorial mode. Each system review includes a “pretest” on day 1 and ends with a “posttest” on day 2. Readings from recommended sources are interspersed with completing *mixed* question sets in tutorial mode. The purpose of the mixed sets is to train for “flexibility,” e.g., the ability to shift cognitive gears from one subject to another. Frequent breaks as well as switching study activities every hour helps to maintain attention and focus over a long day of studying.

Day 34: The systems review concludes with a full-length simulated exam 9 days prior to test day. This allows for two things: 1) Identifying remaining weak areas for additional review and 2) Determining the likelihood of hitting one’s target score on the actual exam.

Days 36 – 41: The third and final portion of the study plan involves a last push to fill as many “knowledge gaps” as possible. Topics for review should be based on the outcome of the simulated exam, as well as personal knowledge of one’s strengths and weaknesses. The primary focus of these days should be on completing practice questions, with only a minimal amount of highly focused content review.

Day 42: There should be ***no studying on the day before*** the actual exam! Any last-minute random facts you might be able to assimilate are not worth the risk of discovering a gap in your knowledge (which there inevitably will be) that would send you into a panic / despair spiral. This is a time to become centered and as relaxed as possible: a day to do things to take your mind *off* the exam and instead focus on your physical and mental wellbeing. Tire yourself out through physical activity followed by meditation or progressive muscle relaxation to help you get to bed early and obtain the full 7-9 hours of sleep your brain requires to function at peak capacity on test day.

Day	Topics	Day Plan	Summary TSH = Total Study Hours
1	Behavioral Science	Warm-up—1-hour: Complete 15 Behavioral Science practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Complete 25-question timed <b>pretest</b> on Behavioral Science followed by a review of all explanations <b>10-minute Break</b> 1-hour: Review medEssentials pp.4-36 <b>10-minute Break</b> 1-hour: Review USMLE Secrets Chapter 16 Psychology (pp.486-518) <b>Lunch Break</b> 1-hour: Review USMLE Secrets Chapter 24 Behavioral Sciences (pp.722-735) <b>10-minute Break</b> 1-hour: Review USMLE Secrets Chapter 25 Biostatistics (pp.736-756) <b>1-hour+ Break</b> 1-hour: Complete 25-question timed <b>posttest</b> on Behavioral Science (include previously incorrect questions) followed by a review explanations for incorrect answers only	TSH: 7+ Questions : 65 Pages: 97
2	Biochemistry  Molecular Biology, Genetics, & Cell Biology  Embryology	Warm-up—1-hour: Complete 15 Biochemistry, Molecular Biology, Genetics, & Cell Biology, and Embryology practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Complete 25-question timed <b>pretest</b> on Biochemistry, Molecular Biology, Genetics, & Cell Biology, and Embryology followed by a review of all explanations 1-hour: Review medEssentials pp.37-57 <b>10-minute Break</b> 1-hour: Complete 25-question timed <b>posttest</b> on Biochemistry (include previously incorrect questions) and review explanations for incorrect answers only <b>Lunch Break</b> 1-hour: Review medEssentials pp.60-85 <b>10-minute Break</b> 1-hour: Complete 25-question timed <b>posttest</b> on Molecular Biology, Genetics, & Cell Biology (include previously incorrect questions) and review explanations for incorrect answers only <b>1-hour+ Break</b> 30 minutes: Review medEssentials pp.141-146 <b>10-minute Break</b> 1-hour: Complete 25-question timed <b>posttest</b> on Embryology (include previously incorrect questions) and review explanations for incorrect answers only	TSH: 7-8+ Questions : 115 Pages: 50
3	Biochemistry  Molecular Biology, Genetics, & Cell Biology  Immunology	Warm-up—1-hour: Complete 15 Immunology practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Review USMLE Secrets Chapter 10 Oncology (pp.291-328) <b>10-minute Break</b> 1-hour: Review USMLE Secrets Chapter 11 Genetic and Metabolic Disease (pp.329-350) <b>Lunch Break</b>	TSH: 6+ Questions : 40 Pages: 101

		<p>1-hour: Review USMLE Secrets Chapter 11 Genetic and Metabolic Disease (pp.350-370)  10-minute Break  1-hour: Complete 25-question timed <b>pretest</b> on Immunology followed by a review of all explanations  10-minute Break  1-hour: Review medEssentials pp.87-110</p>	
4	<p>Immunology  Microbiology</p>	<p>Warm-up—1-hour: Complete 15 Microbiology practice questions in tutorial mode  10-minute Break  1-hour: Review USMLE Secrets Chapter 15 Immunology cases 15-1 thru 15-5 (pp.439-462)  10-minute Break  1-hour: Review USMLE Secrets Chapter 15 Immunology cases 15-6 thru 15-11 (pp.463-485)  10-minute Break  1-hour: Review USMLE Secrets Chapter 20 Vasculitides (pp.618-630)  Lunch Break  1-hour: Complete 25-question timed <b>posttest</b> on Immunology (include previously incorrect questions) and review explanations for incorrect answers only  10-minute Break  1-hour: Complete 25-question timed <b>pretest</b> on Microbiology followed by a review of all explanations  10-minute Break  1-hour: Review medEssentials pp.111-140</p>	<p>TSH: 7+  Questions : 65  Pages: 86</p>
5	<p>Microbiology</p>	<p>1-hour: Complete 50-question timed <b>practice test</b> covering <b>all disciplines reviewed so far</b> (include previously incorrect questions)  10-minute Break  1-hour: Review explanations and concept map problematic content  10-minute Break  1-hour: Review USMLE Secrets Chapter 21 Bacterial Diseases (pp.631-650)  Lunch Break  1-hour: Review USMLE Secrets Chapter 21 Bacterial Diseases (pp.650-673)  10-minute Break  1-hour: Review USMLE Secrets Chapter 22 Viral, Parasitic and Fungal Diseases (pp.674-692)  1-hour+ Break  1-hour: Complete 25-question timed <b>posttest</b> on Microbiology (include previously incorrect questions) and review explanations</p>	<p>TSH: 6+  Questions : 75  Pages: 60</p>

6	Physiology Pathology	<p>Warm-up—1-hour: Complete 15 Physiology and Pathology practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Physiology and Pathology followed by a review of all explanations  <b>10-minute Break</b>  30-minutes: Review medEssentials pp.148-152  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>posttest</b> on Physiology (include previously incorrect questions) and review explanations for incorrect answers only  <b>Lunch Break</b>  30-minutes: Review medEssentials pp.153-163  <b>10-minute Break</b>  1-hour: Review Fundamentals of Pathology Chapter 1 (pp.1-9) &amp; Chapter 2 (pp.11-21)  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 27 Pathology (pp.805-820)  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>posttest</b> on Pathology (include previously incorrect questions) and review explanations for incorrect answers only</p>	TSH: 7+ Questions: 90 Pages: 50
7	Pharmacology / Therapeutics	<p>Warm-up—1-hour: Complete 15 Pharmacology practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Pharmacology followed by a review of all explanations  <b>10-minute Break</b>  1-hour: Review medEssentials pharmacology/therapeutics pp.165-179  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 23 Pharmacology and Toxicology (pp.693-721)  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>posttest</b> on pharmacology (include previously incorrect questions) and review explanations  <b>Lunch Break</b>  1-hour: Complete 50-question timed <b>practice test</b> covering <b>all disciplines reviewed so far</b> (include previously incorrect questions)  <b>10-minute Break</b>  1-hour: Review explanations and concept map problematic content  <b>10-minute Break</b>  1-hour: Continue: Review explanations and concept map problematic content</p>	TSH: 8+ Questions: 115 Pages: 42
8	<b>PRACTICE EXAM</b>	<p>2-hours: Complete 100 question simulated exam; select “timed test”; select “unused only”; select <b>ALL basic sciences/general principles content</b>; strive for &lt;60 seconds/question  <b>1-hour+ Break</b>  2-hours: Review explanations for wrong answers and guesses; identify any patterns of weakness</p>	TSH: 4+ Questions: 100
9	<b>DAY OFF FOR REST AND RECREATION</b>		
10	Nervous System	<p>Warm-up—1-hour: Complete 15 Neurology practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Nervous System followed by a review of all explanations  <b>10-minute Break</b>  1-hour: Review medEssentials pp.183-228  <b>10-minute Break</b>  1-hour: Continue: Review medEssentials pp.183-228  <b>Lunch Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p>	TSH: 8-9+ Questions: 70 Pages: 57

		<p>10-minute Break</p> <p>1-hour: Review Fundamentals of Pathology (pp.177-189)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Continue: Review Fundamentals of Pathology (pp.177-189)</p> <p>Dinner Break</p> <p>30-minutes: SketchyMicro</p>	
11	Nervous System	<p>Warm-up—1-hour: Complete 15 Neurology practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 17 Neurology (pp.519-539)</p> <p>10-minute Break</p> <p>1-hour: Continue: Review USMLE Secrets Chapter 17 Neurology (pp.539-567)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>Lunch Break</p> <p>1-hour: Review USMLE Secrets Chapter 18 Ophthalmology (pp.568-576)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Complete 25-question timed <b>posttest</b> on Nervous System (include previously incorrect questions) and review explanations for incorrect answers only</p> <p>Dinner Break</p> <p>30-minutes: SketchyPharm</p>	<p>TSH: 7-8+</p> <p>Questions: 70</p> <p>Pages: 56</p>
12	Musculo-skeletal System, Skin, & Connective Tissue	<p>Warm-up—1-hour: Complete 15 Musculoskeletal System, Skin &amp; Connective Tissue practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Complete 25-question timed <b>pretest</b> on Musculoskeletal System, Skin &amp; Connective Tissue followed by a review of all explanations</p> <p>10-minute Break</p> <p>1-hour: Review medEssentials pp.423-458</p> <p>10-minute Break</p> <p>1-hour: Continue: Review medEssentials pp.423-458</p> <p>Lunch Break</p> <p>1-hour: Review Fundamentals of Pathology (pp.191-200)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Review Fundamentals of Pathology (pp.201-208)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>Dinner Break</p> <p>30-minutes: SketchyMicro</p>	<p>TSH: 8-9+</p> <p>Questions: 70</p> <p>Pages: 52</p>
13	Musculo-skeletal System, Skin, & Connective Tissue	<p>Warm-up—1-hour: Complete 15 Musculoskeletal System, Skin &amp; Connective Tissue practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 19 Rheumatology (pp.577-595)</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 19 Rheumatology (pp.596-617)</p> <p>Lunch Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 26 Clinical Anatomy (pp. 757-782)</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 26 Clinical Anatomy (pp. 782-804)</p> <p>10-minute Break</p>	<p>TSH: 7-8+</p> <p>Questions: 55</p> <p>Pages: 87</p>

		1-hour: Complete 25-question timed <b>posttest</b> on Musculoskeletal System, Skin, & Connective Tissue (include previously incorrect questions) and review explanations for incorrect answers only Dinner Break 30-minutes: SketchyPharm	
14	OMM/OPP	Warm-up—1-hour: 15 Kaplan Qbank OMM/OPP practice questions in tutorial mode 10-minute Break 1-hour: Complete 25-question timed <b>pretest</b> on OMM/OPP followed by a review of all explanations 10-minute Break 1-hour: Review Savarese OMT Review, as needed Lunch Break 1-hour: Complete 25-question timed <b>posttest</b> on OMM/OPP followed by a review of all explanations	TSH: 4 Questions: 65
15	<b>PRACTICE EXAM</b>	4-hours: Complete 200 question simulated exam; select “timed test”; select unused + incorrect only; select <b>ALL disciplines &amp; ALL organ systems</b> (not just the ones covered so far); strive for <60 seconds/question 1-hour+ Break 4-hours+: Review explanations for wrong answers and guesses; identify any patterns of weakness	TSH: 8+ Questions: 200
16	<b>DAY OFF FOR REST AND RECREATION</b>		
17	Cardiovascular System	Warm-up—1-hour: Complete 15 Cardiovascular System practice questions in tutorial mode 10-minute Break 1-hour: Complete 25-question timed <b>pretest</b> on Cardiovascular System followed by a review of all explanations 10-minute Break 1-hour: Review medEssentials pp.229-272 10-minute Break 1-hour: Continue: Review medEssentials pp.229-272 Lunch Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 10-minute Break 30-minutes: Continue: Review Fundamentals of Pathology Chapter 7 (pp.65-71) 10-minute Break 30-minutes: Continue: Review Fundamentals of Pathology Chapter 8 (pp.73-84) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 1-hour+ Break 30-minutes: SketchyMicro	TSH: 7-8+ Questions: 70 Pages: 60
18	Cardiovascular System	Warm-up—1-hour: Complete 15 Cardiovascular System practice questions in tutorial mode 10-minute Break 1-hour: Review USMLE Secrets Chapter 1 Cardiology (pp.1-33) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 10-minute Break 30-minutes: Review USMLE Secrets Chapter 28 ECG (pp.821-828) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode Lunch Break 1-hour: Complete 25-question timed <b>posttest</b> on Cardiovascular System (include previously incorrect questions) and review explanations for incorrect answers only 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 10-minute Break	TSH: 7+ Questions: 85 Pages: 40

		30-minutes: SketchyPharm	
19	Hematologic & Lymphoreticular System	<p>Warm-up—1-hour: Complete 15 Hematologic &amp; Lymphoreticular System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Hematologic &amp; Lymphoreticular System followed by a review of all explanations  <b>10-minute Break</b>  1-hour: Review medEssentials pp.459-476  <b>10-minute Break</b>  30-minutes: Review Fundamentals of Pathology Chapter 3 (pp.23-30)  <b>Lunch Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>10-minute Break</b>  30-minutes: Review Fundamentals of Pathology Chapter 4 (pp.31-40)  <b>10-minute Break</b>  30-minutes: Review Fundamentals of Pathology Chapter 5 (pp.41-52)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>Dinner Break</b>  30-minutes: Review Fundamentals of Pathology Chapter 6 (pp.53-64)  <b>10-minute Break</b>  30-minutes: SketchyMicro</p>	TSH: 7-8+ Questions: 70 Pages: 55
20	Hematologic & Lymphoreticular System	<p>Warm-up—1-hour: Complete 15 Hematologic &amp; Lymphoreticular System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 12 Anemias (pp.371-404)  <b>10-minute Break</b>  1-hour: Complete 15 practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 13 Bleeding Disorders (pp.404-417)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>Lunch Break</b>  1-hour: Review USMLE Secrets Chapter 14 Hematologic Malignancies (pp.418-438)  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>posttest</b> on Hematologic &amp; Lymphoreticular System (include previously incorrect questions) and review explanations for incorrect answers only  <b>10-minute Break</b>  30-minutes: SketchyPharm</p>	TSH: 7-8+ Questions: 70 Pages: 66
21	Respiratory System	<p>Warm-up—1-hour: Complete 15 Respiratory System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Respiratory System followed by a review of all explanations  <b>10-minute Break</b>  1-hour: Review medEssentials pp.273-297  <b>10-minute Break</b>  1-hour: Continue: Review medEssentials pp.273-297  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>Lunch Break</b>  1-hour: Review Fundamentals of Pathology Chapter 9 (pp.85-98)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p>	TSH: 7-8+ Questions: 70 Pages: 38

		<p>1-hour+ Break 30-minutes: SketchyMicro</p>	
22	Respiratory System	<p>Warm-up—1-hour: Complete 15 Respiratory System practice questions in tutorial mode 10-minute Break 1-hour: Review USMLE Secrets Chapter 2 Pulmonology (pp.34-66) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode Lunch Break 1-hour: Complete 25-question timed <b>posttest</b> on Respiratory System (include previously incorrect questions) and review explanations for incorrect answers only 10-minute Break 30-minutes: SketchyPharm</p>	<p>TSH: 5-6+ Questions: 70 Pages: 32</p>
23	<b>PRACTICE EXAM</b>	<p>4-hours: Complete 200 question simulated exam; select “timed test”; select unused + incorrect only; select ALL disciplines &amp; ALL organ systems (not just the ones covered so far); strive for &lt;60 seconds/question 1-hour+ Break 4-hours+: Review explanations for wrong answers and guesses; identify any patterns of weakness</p>	<p>TSH: 8+ Questions: 200</p>
24	<b>DAY OFF FOR REST AND RECREATION</b>		
25	Renal & Urinary System	<p>Warm-up—1-hour: Complete 15 Renal &amp; Urinary System practice questions in tutorial mode 10-minute Break 1-hour: Complete 25-question timed <b>pretest</b> on Renal &amp; Urinary System followed by a review of all explanations 10-minute Break 1-hour: Review medEssentials pp.299-332 10-minute Break 1-hour: Review medEssentials pp.299-332 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode Lunch Break 30-minutes: Review Fundamentals of Pathology Chapter 12 (pp.125-136) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 1-hour+ Break 30-minutes: SketchyMicro</p>	<p>TSH: 7+ Questions: 70 Pages: 44</p>
26	Renal & Urinary System	<p>Warm-up—1-hour: Complete 15 Renal &amp; Urinary System practice questions in tutorial mode 10-minute Break 1-hour: Review USMLE Secrets Chapter 3 Nephrology (pp.67-96) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 10-minute Break 1-hour: Review USMLE Secrets Chapter 4 Fluid and Electrolytes (pp.97-116) Lunch Break 1-hour: Review USMLE Secrets Chapter 5 Acid-Base Balance (pp.117-133) 10-minute Break 1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode 10-minute Break 1-hour: Complete 25-question timed <b>posttest</b> on Renal &amp; Urinary System (include previously incorrect questions) and review explanations for incorrect answers only 10-minute Break 30-minutes: SketchyPharm or Pharm Flashcards</p>	<p>TSH: 7-8+ Questions: 70 Pages: 64</p>

27	Gastrointestinal System	<p>Warm-up—1-hour: Complete 15 Gastrointestinal System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Gastrointestinal System and review all explanations  <b>10-minute Break</b>  1-hour: Review medEssentials pp.333-368  <b>10-minute Break</b>  1-hour: Review medEssentials pp.333-368  <b>Lunch Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>10-minute Break</b>  30-minutes: Review Fundamentals of Pathology Chapter 10 (pp.99-114)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>1-hour+ Break</b>  1-hour: Review Fundamentals of Pathology Chapter 11 (pp.115-124)  <b>10-minute Break</b>  30-minutes: SketchyMicro</p>	<p>TSH: 8+  Questions: 70  Pages: 60</p>
28	Gastrointestinal System	<p>Warm-up—1-hour: Complete 15 Gastrointestinal System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 6 Gastroenterology (pp.134-163)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 7 Hepatology (pp.164-195)  <b>Lunch Break</b>  1-hour: Complete 25-question timed <b>posttest</b> on Gastrointestinal System (include previously incorrect questions) and review explanations for incorrect answers only for incorrect answers  <b>10-minute Break</b>  30-minutes: SketchyPharm or Pharm Flashcards</p>	<p>TSH: 5-6+  Questions: 55  Pages: 61</p>
29	Endocrine System	<p>Warm-up—1-hour: Complete 15 Endocrine System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Complete 25-question timed <b>pretest</b> on Endocrine System followed by a review of all explanations  <b>10-minute Break</b>  1-hour: Review medEssentials pp.369-391  <b>10-minute Break</b>  1-hour: Continue: Review medEssentials pp.369-391  <b>Lunch Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Review Fundamentals of Pathology Chapter 15 (pp.159-170)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode  <b>10-minute Break</b>  30-minutes: SketchyMicro</p>	<p>TSH: 7-8+  Questions: 70  Pages: 33</p>
30	Endocrine System	<p>Warm-up—1-hour: Complete 15 Endocrine System practice questions in tutorial mode  <b>10-minute Break</b>  1-hour: Review USMLE Secrets Chapter 8 Endocrinology (pp.196-229)  <b>10-minute Break</b>  1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p>	<p>TSH: 6-7+  Questions: 70  Pages: 54</p>

		<p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 8 Endocrinology (pp.229-251)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>Lunch Break</p> <p>1-hour: Complete 25-question timed <b>posttest</b> on Endocrine System (include previously incorrect questions) and review explanations for incorrect answers only</p> <p>10-minute Break</p> <p>30-minutes: SketchyPharm or Pharm Flashcards</p>	
31	Reproductive System	<p>Warm-up—1-hour: Complete 15 Reproductive System practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Complete 25-question timed <b>pretest</b> on Reproductive System followed by a review of all explanations</p> <p>10-minute Break</p> <p>1-hour: Review medEssentials pp.393-421</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Review Fundamentals of Pathology Chapter 13 (pp.137-150)</p> <p>Lunch Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>30-minutes: Review Fundamentals of Pathology Chapter 14 (pp.151-158)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>Dinner Break</p> <p>30-minutes: SketchyMicro</p>	<p>TSH: 8</p> <p>Questions: 95</p> <p>Pages: 48</p>
32	Reproductive System	<p>Warm-up—1-hour: Complete 15 Reproductive System practice questions in tutorial mode</p> <p>10-minute Break</p> <p>30-minutes: Review Fundamentals of Pathology Chapter 16 (pp.171-176)</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 8 Male / Female Reproductive Systems (pp. 252-272)</p> <p>10-minute Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Review USMLE Secrets Chapter 8 Male / Female Reproductive Systems (pp. 273-290)</p> <p>Lunch Break</p> <p>1-hour: Complete 15 mixed (all systems) practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Complete 25-question timed <b>posttest</b> on Reproductive System (include previously incorrect questions) and review explanations for incorrect answers only</p> <p>10-minute Break</p> <p>30-minutes: SketchyPharm or Pharm Flashcards</p>	<p>TSH: 6-7+</p> <p>Questions: 70</p> <p>Pages: 53</p>
33	OMM/OPP	<p>Warm-up—1-hour: 15 Kaplan Qbank OMM/OPP practice questions in tutorial mode</p> <p>10-minute Break</p> <p>1-hour: Complete 25-question timed <b>pretest</b> on OMM/OPP followed by a review of all explanations</p> <p>10-minute Break</p> <p>1-hour: Review Savarese OMT Review, as needed</p> <p>Lunch Break</p> <p>1-hour: Complete 25-question timed <b>posttest</b> on OMM/OPP followed by a review of all explanations</p>	<p>TSH: 4+</p> <p>Questions: 65</p>

34	<b>SIMULATED / READINESS EXAM</b> <b>Kaplan Step 1 Simulated Exam or NBME Assessment</b>		TSH: 8 Questions: ~400
35	<b>DAY OFF FOR REST AND RECREATION</b>		
36	Weak area #1	Warm-up—1-hour: Complete 25 weak area #1 practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Focused review of weak area #1 <b>10-minute Break</b> 1-hour: Complete 25 weak area #1 practice questions in <b>timed</b> mode (include previously incorrect questions) <b>Lunch Break</b> 1-hour: Review explanations for wrong answers <b>10-minute Break</b> 1-hour: Complete 50 mixed (all systems, all disciplines) practice questions in <b>timed</b> mode <b>10-minute Break</b> 1-hour: Review explanations for wrong answers	TSH: 6+ Questions: 100
37	Weak area #2	Warm-up—1-hour: Complete 25 weak area #2 practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Focused review of weak area #2 <b>10-minute Break</b> 1-hour: Complete 25 weak area #2 practice questions in <b>timed</b> mode (include previously incorrect questions) <b>Lunch Break</b> 1-hour: Review explanations for wrong answers <b>10-minute Break</b> 1-hour: Complete 50 mixed (all systems, all disciplines) practice questions in <b>timed</b> mode <b>10-minute Break</b> 1-hour: Review explanations for wrong answers	TSH: 6+ Questions: 100
38	Weak area #3	Warm-up—1-hour: Complete 25 weak area #3 practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Focused review of weak area #3 <b>10-minute Break</b> 1-hour: Complete 25 weak area #3 practice questions in <b>timed</b> mode (include previously incorrect questions) <b>Lunch Break</b> 1-hour: Review explanations for wrong answers <b>10-minute Break</b> 1-hour: Complete 50 mixed (all systems, all disciplines) practice questions in <b>timed</b> mode <b>10-minute Break</b> 1-hour: Review explanations for wrong answers	TSH: 6+ Questions: 100
39	Weak area #4	Warm-up—1-hour: Complete 25 weak area #4 practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Focused review of weak area #4 <b>10-minute Break</b> 1-hour: Complete 25 weak area #4 practice questions in <b>timed</b> mode (include previously incorrect questions) <b>Lunch Break</b> 1-hour: Review explanations for wrong answers <b>10-minute Break</b> 1-hour: Complete 50 mixed (all systems, all disciplines) practice questions in <b>timed</b> mode <b>10-minute Break</b> 1-hour: Review explanations for wrong answers	TSH: 6+ Questions: 100

40	Weak area #5	Warm-up—1-hour: Complete 25 weak area #5 practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Focused review of weak area #5 <b>10-minute Break</b> 1-hour: Complete 25 weak area #5 practice questions in <b>timed</b> mode (include previously incorrect questions) <b>Lunch Break</b> 1-hour: Review explanations for wrong answers <b>10-minute Break</b> 1-hour: Complete 50 mixed (all systems, all disciplines) practice questions in <b>timed</b> mode <b>10-minute Break</b> 1-hour: Review explanations for wrong answers	TSH: 6+ Questions: 100
41	Weak area #6	Warm-up—1-hour: Complete 25 weak area #6 practice questions in tutorial mode <b>10-minute Break</b> 1-hour: Focused review of weak area #6 <b>10-minute Break</b> 1-hour: Complete 25 weak area #6 practice questions in <b>timed</b> mode (include previously incorrect questions) <b>Lunch Break</b> 1-hour: Review explanations for wrong answers <b>10-minute Break</b> 1-hour: Complete 50 mixed (all systems, all disciplines) practice questions in <b>timed</b> mode <b>10-minute Break</b> 1-hour: Review explanations for wrong answers	TSH: 6+ Questions: 100
42	<b>DAY OF REST NO STUDYING</b>	Work-out Go see a movie Gather up all the things needed for test day (e.g., IDs, meds, snacks) Set two alarms to ensure waking-up on time Do relaxation yoga or progressive muscle relaxation before bed Go to bed early enough to get 8 hours of sleep	
<b>TEST DAY</b>		Arrive at test center 30-minutes early Think positive thoughts	

## Sample Study Plan 2: Student Created Schedule 1 (pages 25 – 35):

### USMLE and COMLEX Step 1 Study Plan

So it's almost time to study for boards but you have no idea where to start. We remember exactly how that feels. We were lucky enough to have friends in the class ahead of us to offer us advice on what to do. So now we want to pass on a collection of our advice and advice we have been given to you! There will be some tough days ahead but never forget that you have what it takes and you will be so proud of yourself when you're finally done! If you have any questions by the time you finish reading this extremely long guide to board studying, we will be happy to answer any question you may have.

Our purpose in sharing all of the details of what we did to study is not because it is the best way to approach boards but just one example of what worked for us. Everyone has their own way of doing this so if you aren't able to do everything we suggest, don't worry, just do what works for you!

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### **BOARD STUDYING -- BEFORE RESPIRATORY ENDS**

All of the things in this section are things that you might want to try to do before getting into respiratory. Respiratory is a pretty demanding class, and once you get into it your focus should just be getting as

much out of the class that you can and doing as well as possible. This will serve you well when starting your boards studying, so don't be worried that you're not doing more on top of that. We had watched Pathoma once and annotated into the Pathoma book. It is best to do a video or two whenever you get the chance during system courses or do a few over breaks from school. We also watched Pathoma a second time and annotated directly into First Aid (with Pathoma book out to look at our previous notes). We tried to do this also **before** respiratory ends, we ended up doing a large chunk of it during the few weeks off in February/March and only had a few sections left by the time respiratory ended.

Something we did **NOT** do that we wish we had, during the spring semester (Ethics and Respiratory courses), we wish we had made flashcards for every drug in First Aid. I am not usually a flash card learner so I dismissed the idea when I heard it, but it would be really helpful to have. There are some out there to buy (we ended up buying Lange—and didn't use them much) but we still wish we had made our own. It is better to do this before board studying season because then you want to focus on memorizing not making the flashcards. The major goal here is to have a rapid way to associate drug names with their function, the rest of the details will come when you study the drugs in First Aid. However, if you do not want to make your own, there is a quizlet set that we linked in the "Other useful tools" section below. If you want to get a questions bank before classes end and you think you will use it, then go for it! I had COMBANK but never used it very much, only to find out that UWORLD is a much better question bank. We bought the 60 day subscription with 2 self-assessment exams for \$219 pretty much as soon as respiratory ended. Of course you want to make sure you get a subscription that goes through your exam day. Personally, I would say that to really get what you need out of UWORLD, you should wait until you are studying for boards to start it. If you want a QBank now, get COMBANK. It will also be helpful for adjusting to COMLEX style questions which are written much different than USMLE and UWORLD questions, as well as for practicing some OMM questions.

If you are interested in doing some extra studying before the big push of boards studying (beyond Pathoma, making the pharm flash cards, and doing some question bank questions), we would both suggest that microbiology might be a good place to start. Getting more familiar with all the bugs would have been nice when starting, and could also be very helpful for respiratory. We didn't use it, but we heard lots of good things about SketchyMicro. If that's not enough for you, you could also put some time into getting more familiar with the biochemistry in First Aid, but that might be a lot to tackle. You definitely don't have to do any of this extra preparation, we didn't, but if you are looking for a place to start this might be good.

One final thing you should do before respiratory ends is get your First Aid unbound and put it in a big binder--this is SO helpful. It is also useful to have a PDF of the edition of First Aid that you own so that as you do questions, you can just search the topic you want in the PDF. Otherwise you will get VERY familiar with the alphabet by constantly using the index in the back.

## **BOARD STUDYING -- AFTER RESPIRATORY ENDS**

### **What should my daily schedule be like?**

When it's time to start board studying, try to have a regular schedule of which days you want to study where. We chose to study at our apartments rather than coffee shops, less distractions and your meal times can be quicker. We also decided to plan and prep most/all of the meals (at least dinners) for the week on Sundays so that we could have a good meal ready to go so that we could stop, prepare and eat a meal all within 30 minutes. It might sound kind of crazy now, but you'll realize how beneficial this is later!

Our schedule consisted of 10 hours of studying Monday through Saturday, **not including breaks** for meals, work outs, etc. I would wake up at 7 AM, be studying by 8 AM and we could be done anytime between 7-9 PM depending on whether we worked out that day or had longer breaks for meals, etc.

### **What should I use to study?**

- First Aid 2015/2016 when it comes out - This is your best friend. It doesn't change too drastically between editions, so either the 2015 or 2016 should both be just fine. Get a PDF version as well

so that when you want to look up the page something is on you can search it quickly, but you will definitely need a paper copy to annotate and read. [First Aid PDF](#)

- First Aid keeps a running tab of any errors found, may not be of high importance but may be helpful in case you run into contradicting information.
- [Pathoma](#) -As previously mentioned, hopefully by the time you have gotten to actual board studying you have watched Pathoma once, if not twice, and annotated it into your First Aid.
- [UWORLD question bank](#) - This question bank very thoroughly tests the content of First Aid and teaches the content very well so long as you spend the time reviewing every question.
  - If you finish UWORLD, rather than starting COMQUEST or COMBANK, you should restart UWORLD. Depending on which subscription you buy, you may be able to reset the QBANK **once**.
- [UWORLD Self Assessment Exams](#) – We each took one of these. It was a good confidence builder after finishing going through First Aid the first time.
- [Saverese](#) – This is the best resource for OMM that we have for COMLEX Step 1. Also study the House of Golden and the Chapmans points
- “Fun sheets”– This is not a product to buy, but a study tool that we used. As we studied, we found there were certain concepts that we kept forgetting easily or having a hard time memorizing by just reading once. When this happened, we would write down the concepts on a blank piece of paper and compile them as studying went on. For example, glycogen storage diseases, lysosomal storage diseases, and the renal pathologies were some of the topics we made our “fun sheets” on.

### Other useful tools

- [USMLE \(and COMLEX\) virus mnemonic](#) - **(FREE)** This is a useful way to quickly memorize and classify the viruses you need to know.
- [Quizlet First Aid Pharmacology Flashcards](#) – **(FREE)** This is a pretty conclusive list of all the drugs you will find in First Aid. May be a great alternative to making your own!
- [Lange Pharmacology Flash Cards](#) – **(~\$30)** We didn’t use these very much but a lot of people love them. They have cases on them and a lot of details about each drug.
- [Lippincott's Microcards: Microbiology Flash Cards](#) – **(~\$32)** These were pretty helpful to me. They are organized very well and have nice flow charts to show the classification of viruses/bacteria/protozoa/parasites, etc.
- [Anterior Chapman points schematic](#) - **(FREE)** this video is great! But make sure you also know some posterior Chapman points. (Posterior appendix is between the SP and TP of T11, posterior adrenal point is between T11 and T12 SP and TP, posterior kidney point is between T12 and L1 SP and TP, posterior uterus point is at the L5 TP) Some of the posterior Chapman’s points are in Saverese but it is missing many anterior points.
- [Quizlet Chapman points flashcards](#) – **(FREE)** This is a free set of flashcards for anterior and posterior Chapman points
- [OMM Chapman Points and Autonomics Flashcard App](#) - **(FREE)** We didn’t end up using this as much as we thought we would, but it would definitely be a good resource for someone who likes learning from flashcards. It’s \$1.99 on iTunes.
- [Goljan's Rapid Review Pathology](#) – **(~\$37)** This is a great resource but goes much more in depth than you will need and more than you have time for. If you want to get it, use it mostly as a resource to go more in depth on difficult topics. I did not use this book but was advised to focus on the margins of the pages where Goljan puts the high yield material.
  - Audio lectures – There are recordings of Dr. Goljan’s lectures over his high yield material that may be a good thing to listen to if you have any long drives or during exercise when you still want to study. I did not use this resource either but just wanted to pass along advice I was given!

### How should I study?

We would start the mornings with reading from first aid. Later we’ll talk about how exactly we split each section, but the usual format was to read from one of the basic science sections for about an hour or so,

and then move onto one of the system sections. This usually took us about 4 to 5 hours total in the morning. The rest of the time that day was spent doing questions from what we read that morning. We would only pick the sections on UWORLD that pertained to what we had studied that day so that we were (hopefully) getting tested on the material we should have learned already.

### **So how do I use a question bank?**

UWORLD (or any other question bank you decide to use) (but you should really use UWORLD) is chalked full of information. Every question has a take home point, or 2 or 3, to teach you, but there's a lot of value in reading why all of the incorrect questions are wrong too. How we approached it is to do questions in small blocks, usually 10 at a time, and then to review those questions afterwards. Whether you got the question right or wrong, take the time to read the explanation for the question, what were the faulty thoughts that may have led to any of the incorrect foils, and be sure you leave with the take home point(s). Be sure to annotate in anything that you can't find in your First Aid so that it's there the next time you read through. You will find that UWORLD has a lot of information that isn't in First Aid, but you'll also find that if you do enough searching, most of it is in there somewhere.

It's easy to get caught up in details, and it's difficult to be able to focus on only what is important moving forward. Don't get so hung up on all of the minutia that you don't get through the questions in a timely manner, but you also don't want to ignore valuable parts of questions either. It's a bit of an art to learn the balance, so don't get frustrated with yourself if it takes a while to get dialed in.

### **Schedule**

We started by writing out all of the chapters in First Aid and deciding how many days we wanted to spend on that subject. (Breakdown below)

Behavioral Science (Biostatistics and Ethics) (1), Biochemistry, Microbiology, Immunology, Pathology, Pharmacology, Cardiovascular (3), Endocrine (2), Gastrointestinal (3), Hematology and Oncology (3), Musculoskeletal/Skin/Connective Tissue (2), Neurology (3), Psychiatry (1), Renal (2), Reproductive (2), and Respiratory (2)

The following chart is a day by day breakdown of what sections of First Aid we read, how many pages, then what questions we did for the rest of the day. I also wrote a little description of each day underneath the chart as we went so if anything in the chart is confusing, refer to the descriptions to decide how to approach each day. I also tried to indicate about how many hours we had to study to accomplish the day's goal.

### **Is there anything more or different that you would have done?**

We are both happy with how we did and how hard we worked, so from that perspective we have no regrets about how we approached studying. What are some things that we picked up along the way that weren't ever worked into our schedule? That might be a better question. Like we talked about with approaching questions on UWORLD, at times we got too hung up on details instead of getting through more content by doing more questions. It may have served us better to try and do questions at a faster pace, but it's hard to say. If we were going to look at anything extra beyond the schedule we setup, it would probably be some of the sections of Goljan. Maybe another look at neurology from a different perspective would have been good, and possibly a touch up on cardiology or respiratory. What exactly you reviewed in there would depend on what you felt you needed more work in, and we can't say exactly how helpful that book would be since we didn't use it, but we heard good things and it might be worth a shot.

Week 1	Annotated Pathoma into First Aid	Annotated Pathoma into First Aid - Behavioral Sciences chapter - 60-70 questions	Behavioral Sciences (15-25 questions to finish section) -- Respiratory chapter-- 40 questions	Respiratory -- 90 questions	Cardiovascular Embryology, Anatomy and Physiology - 45 questions	Cardiovascular Pathology - 50 questions	Break day - Retake 46 "incorrect" questions	Total questions 311
Week 2	8 pages of Biochemistry -- Cardiology- Pharmacology and Renal- Pharmacology -- 60 questions	9 pages of Biochemistry -- Neurology Embryology, Anatomy, and Physiology --45 questions	8 pages of Biochemistry -- Neurology Pathology --50 questions	10 pages of Biochemistry -- Neurology Pharmacology -- 60 questions	10 pages of Biochemistry -- Musculoskeletal Anatomy and Physiology -- 63 questions	10 pages of Biochemistry -- Musculoskeletal Pathology and Pharmacology --50 questions	Break day - Retake 46 "incorrect" questions	328
Week 3	8 pages of Microbiology -- Hematology and Oncology (1/2 of the chapter) -- 60 questions	8 pages of Microbiology -- 2nd half of Hematology Oncology chapter except pharmacology -- 70 questions	8 pages of Microbiology -- Hematology and Oncology pharmacology -- 39 questions heme/onc --21 biochem/genetics	8 pages of Microbiology -- Renal Anatomy, Embryology, and Physiology -- 53 questions	8 pages of Microbiology -- All of Renal Pathology and Pharmacology -- 50 questions	8 pages of Microbiology -- Psychiatry Psychology/Pathology -- 39 questions	Break day - Retake 46 "incorrect" questions	332
Week 4	8 pages of Microbiology -- Gastrointestinal Embryology, Anatomy, and Physiology -- 40 questions	8 pages of Microbiology -- Gastrointestinal pathology -- 40 questions	8 pages of Microbiology -- Gastrointestinal Pharmacology -- 60 questions	12 pages of Pharmacology -- Endocrine Embryology, Anatomy, and Physiology (and a little Pathology to get you halfway) -- 50 questions	Finish Pharmacology chapter --Finish Endocrine chapter -- 40 questions	Read half of Immunology chapter - - Reproductive Embryology, Anatomy, and Physiology -- 50 questions	Break day - We didn't study at all!	280
Week 5	Finished the Immunology chapter --Finish Reproductive chapter -- 25 questions --5	Read whole Pathology chapter -- 50 <b>immunology</b> questions	UWORLD Self-assessment	Review self assessment questions	Made and reviewed ANS drugs flashcards ~1 hour -- Finish reviewing self assessment -- Set of 44 questions	Break day!	Finish reviewing 44 questions from two days ago -- Take <b>TWO</b> more sets of 44 under all subjects	222

	Histo/biostats --10 Endocrine				from ALL questions			
Week 6	Review questions from yesterday -- Take <b>TWO</b> more sets of 44	Review questions from yesterday -- Take <b>TWO</b> more sets of 44	Review questions from yesterday	Review any remaining questions -- Take <b>TWO</b> more sets of 44	Review questions from yesterday -- Take <b>TWO</b> more sets of 44	Review questions from yesterday	Take <b>TWO</b> sets of 44 (don't review) -- Re-read Cardiology and Respiratory chapters	440
Week 7	Re-read Psychiatry and Neurology chapters	Re-read Endocrine and Reproductive chapters -- Review incorrect questions from a few days ago -- 10 questions on neuro pharmacology	Re-read Gastrointestinal and Hematology/Oncology	Clerkship Orientation -- Re-read Musculoskeletal/Connective Tissue/Dermatology	Re-read Renal, Immunology, Pathology, and Pharmacology	Re-read Biochemistry	ACLS prep most of the day -- Read as much Microbiology as time allowed	
Week 8	ACLS from 7-5PM -- Read more of Microbiology chapter	Finish Microbiology chapter (=finish reading First Aid for the second time! Yay!)	Two days before our USMLE -- See Week 8, Day 51 for specific topics we decided to review this day	Day before USMLE --See day 52 for specific topics	USMLE!	Day of rest :)	Read 90 pages of Saverese	
Week 9	Finished reading Saverese -- Memorize Chapman's points – Great video for this in the “other useful tools” section above	Same review topics as two days before the USMLE	Same review topics as the day before the USMLE	COMLEX!				

## What should I expect on exam day?

### USMLE exam day tips:

- Do the tutorial on the NBME website. It will basically just be an opportunity for you to get familiar with the software, however it is essentially identical to UWORLD. It will also explain some of the rules of test day as far as taking breaks, lunch, etc.
- Bring your scheduling permit, driver's license, snacks, lunch and water!
- Be sure to take your breaks! You will need the mental breaks, and they will help you to refocus between sessions. We both suggest taking more small breaks as opposed to longer ones. Move around, take some deep breaths, and get back into your prime test taking zone.

### COMLEX exam day tips:

- You should have done the tutorial before the test day so USE THAT TIME to write out bacterial/Chapman points/viral/House of Golden/protozoa charts. This time won't count against you so rather than skipping the tutorial, use it to organize yourself.
- Make sure you take your breaks. If you can manage to finish your first two sections with five minutes remaining per set, then you can take your first 10 minute break without any deduction from your testing time.
- If you can, get some fresh air during your lunch break. You get 40 minutes, so take full advantage. Eat slow, get some flow flowing, and try not to think about the morning sessions.

GOOD LUCK!

## WEEK ONE

Day 1 – Annotated Pathoma into First Aid

Day 2 – Annotated last section into First Aid. Read “Behavioral Sciences” chapter of First Aid. Did U-World questions on from “Biostatistics and Epidemiology” and “Social Sciences” sections. We did blocks on 10 questions timed then annotated answers as thoroughly as possible into First Aid. ~60-70 questions.

Day 3 - Finished “Biostatistics and Epidemiology” and “Social Sciences” sections of U-World (about **~16-26 questions**). Read “Respiratory” section of First Aid. Begin “Pulmonary and Critical Care” and “Ear, Nose, and Throat” questions and annotate into First Aid. We chose to uncheck \*Biochem, Genetics, Immuno, and Micro\* from the main divisions section in order to focus the questions on the material we had read about in First Aid. We did **~40 questions.**

Day 4 – Continue “Pulmonary and Critical Care” and “Ear, Nose, and Throat” questions and annotate into First Aid. We did **90 questions** this day. We had not finished the questions for these sections by the end of the day but we will come back to them later.

Day 5 – Switch to “Cardiovascular” chapter of First Aid. We read the first half – stopped at the end of physiology/beginning of pathology. The rest of the day ~after lunch, is U-World questions. We did **~45 questions** under main divisions “Embryology”, “Genetics”, “Histology”, “Anatomy”, “Biostats”, and “Physiology” and sub-division “Cardiovascular system”. This narrowed it down fairly well to material we read that morning. It was a more than 10 hour day for us ☺.

Day 6 – Read the pathology portion of “Cardiovascular” chapter of First Aid. We chose not to read the pharmacology yet, there is a lot to work on before adding pharm in! Once you're done reading, do “Pathology” and “Pathophysiology” main division and subdivision “Cardiovascular system”. Do as many questions as you can until 10 hours is up. We did **50 questions.**

-----**311 questions this week** -----

Day 7 – Sunday! ☺ We did 46 questions by selecting all of the main divisions and sub divisions and only doing questions from the “Incorrect” sections of questions. The goal was to see things we had gotten wrong at first to see if we had learned from it and which concepts did not stick. **46 questions** took us about 30 minutes and we didn't spend more than fifteen minutes reviewing questions at the end, only ones we got wrong again or that we struggled with and wanted to review. The rest of the day we took off! (Meal prepping and relaxing)

## WEEK 2

Day 8 – Today we started by reading the first 8 pages of “Biochemistry” in First Aid. We held ourselves to a strict 1 hour to finish this. At 9 AM we started reading the pharmacology pages of “Renal” chapter in First Aid followed by the pharmacology pages of “Cardiology” in First Aid. The rest of the day was questions under main division “Pharmacology” and sub-division “Cardiovascular.” This was a pretty tough day for us but we just learned as much as we could. We did **60 questions**.

Day 9 – We continued our reading of the “Biochemistry” chapter of First Aid. We read about 9 more pages to get us up to the genetics portion of the chapter. This was about an hour. Then we read the first 30 pages of the “Neurology” chapter of First Aid which included Embryology and Anatomy and Physiology. We stopped just before Ophthalmology. Then we did **45 questions**.

Day 10 – Started by reading all of the “Biochemistry-Genetics” portion of the chapter, about 8 pages. Then finished the First Aid “Neurology” up to the pharmacology portion. We did questions from “Pathology” and “Pathophysiology” and did **50 questions**.

Day 11 – Read 10 pages of “Biochemistry – Metabolism” for the first hour of the day. Read the pharmacology portion of the “Neurology” chapter of First Aid. Did questions under “Pharmacology” sub-division “Nervous System.” You will need to also pull out the “Psychiatry-Pharmacology” section of your First Aid because all of the psych pharm is included in the neuro pharm. We did **60 questions**.

Day 12 – We read the next 10 pages of “Biochemistry – Metabolism” for the first hour of the day. Then we read the first half of First Aid chapter “Musculoskeletal, Skin, and Connective Tissue”. We did questions under “Anatomy”, “Biostatistics”, “Embryology”, “Genetics”, “Histology”, and “Physiology” with sub divisions “Dermatology” and “Rheumatology/Orthopedics & Sports”. **63 questions**.

Day 13 – We finished “Biochemistry” and “Musculoskeletal, Skin, and Connective Tissue”. We questions from ALL main divisions except “Immunology” and “Microbiology” under sub divisions “Dermatology” and “Rheumatology/Orthopedics & Sports”. **50 questions**.

-----**328 questions this week** -----

Day 14 – Same as last Sunday. We reviewed 46 questions by selecting all of the main divisions and sub divisions and only doing questions from the “Incorrect” sections of questions. The rest of the day we took off! ☺

### WEEK THREE

Day 15 – We read the first 8 pages of Microbiology, then half of the “Hematology and Oncology” chapter of First Aid. Questions under “Anatomy”, “Behavioral Science”, “Biochemistry”, “Biostatistics”, “Embryology”, “Genetics”, “Histology”, and “Physiology” (everything except Immunology, Microbiology, Pathology, Pathophysiology and Pharmacology) main division “Hematology & Oncology”. **60 questions**

Day 16 – We read 8 more pages of Microbiology, through the end of Gram + bugs. Then we read the rest of the pathology in the “Hematology and Oncology” chapter of First Aid. We did questions under “Pathology” and “Pathophysiology”, subdivision “Hematology & Oncology”. **70 questions**.

Day 17 – We read the next 8 pages of Microbiology. Then the pharmacology section of “Hematology & Oncology”. We were able to finish all of the Heme/Onc pharm questions. When we finished, we chose “Biochemistry” and “Genetics” from the main divisions and “General Principles” under the subdivisions. **60 questions (39 of heme/onc, 21 of biochem/genetics)**

Day 18 – We read the next eight pages of Microbiology (through parasites). Then we read the Anatomy/Physiology portions of the “Renal” chapter of First Aid. Then we did questions “Anatomy”, “Biochemistry”, “Biostatistics”, “Embryology”, “Genetics”, “Histology”, and “Physiology” under the “Renal, Urinary Systems, and Electrolytes.” **53 questions**.

Day 19 – We read the next 8 pages of Microbiology (through RNA viruses). Then we read the rest of the “Renal” chapter of First Aid, including the pharmacology that we had already read while studying cardiology pharmacology. Then we did questions under main divisions “Pathology” “Pathophysiology” and “Pharmacology” under subdivision “Renal, Urinary Systems, and Electrolytes.” **50 questions**

Day 20 – We read 8 more pages of “Microbiology”, we finished the viruses today. Then we read the “Psychiatry” chapter of First Aid up until the pharmacology section. Then we did questions under “Behavioral Sciences” and subdivision “Psychiatric/Behavioral & Substance Abuse,” we finished all of the questions available for this section (38). There was one “Behavioral Science” questions under subdivision “General Principles”, we did that question as well. The way U-World is set up, all of the psych pharm questions are bundled into the Neuro pharm. So at the end of the day, we read the psych pharm. When we have time, we will do neuro and psych pharm questions. **39 questions (all of the psych)**

-----**332 questions this week** -----

Day 21 –Regular Sunday. We reviewed 46 questions by selecting all of the main divisions and sub divisions and only doing questions from the “Incorrect” sections of questions. This starts getting harder because there is a bigger pool of incorrect questions and from multiple systems. It is good to do it and see those tough questions again. The rest of the day we took off! ☺

#### **WEEK FOUR**

Day 22 – We started the day by drawing out both the gram negative and gram positive flow charts. We are going to do this every day until we have it confidently memorized. The goal is to be able to draw those flow charts first thing on exam day so we don’t have to continuously recall the classification system. We read 8 more pages of Microbiology, we are up to the antimicrobials now. Then we read the Embryology/Anatomy/Physiology sections of the “Gastrointestinal” chapter of First Aid. We did questions on all of main divisions except “Immunology”, “Microbiology”, “Pathology”, “Pathophysiology”, “Pharmacology” and subdivision “Gastrointestinal & Nutrition.” We got through only **40 questions.**

Day 23 – We started with gram negative and gram positive flow chart practice. We read 8 more pages of Microbiology, up to the anti-fungal medications. Then we read all of the pathology from the “Gastrointestinal” chapter of First Aid. We did questions under main divisions “Pathology” and “Pathophysiology” and subdivision “Gastrointestinal & Nutrition.” **40 questions.**

Day 24 – We started with gram negative and gram positive flow chart practice. Then we finished reading the “Microbiology” chapter of First Aid. We also finished the “Gastrointestinal” chapter of First Aid by reading the pharmacology section. We first did the 22 questions available under “Pharmacology” and sub division “Gastrointestinal & Nutrition.” Then we did 38 more with all of the main divisions except “Immunology” and subdivision “Gastrointestinal & Nutrition.” **60 questions.**

Day 25 – We started with gram negative and gram positive flow chart practice. Then we read the first 12 pages of the “Pharmacology” chapter of First Aid. Next, we read the first half of the “Endocrine” chapter of First Aid which includes the Embryology/Anatomy/Physiology sections and a little bit into the pathology. We then did questions under all main divisions except “Pathology”, “Pathophysiology” and “Pharmacology” and subdivision “Endocrine, Diabetes & Metabolism.” Just to warn you, this will be a heavy biochemistry day. There will also be a good amount of reproductive physiology, it is helpful to keep “Biochemistry”, “Endocrine”, and “Reproductive” chapters of First Aid out all day as you do questions because you will continually need all of them. This day was longer than 10 hours of studying for us, we are a little behind on our question quota for the week so we wanted to go a little longer. **50 questions.**

Day 26 – We started with gram negative and gram positive flow chart practice. We finished the “Pharmacology” chapter of First Aid. Then we finished the “Endocrine” chapter of First Aid Pathology/Pharmacology. Then we did questions under main divisions “Pathology”, “Pathophysiology”, “Pharmacology” and sub division “Endocrine, Diabetes & Metabolism.” **40 questions.**

Day 27 – We started with gram negative and gram positive flow chart practice. We started the “Immunology” chapter of First Aid and read half of it. Then we read the Embryology/Anatomy/Physiology section of the “Reproductive” chapter of First Aid. This was a pretty long reading day for us! Then we did questions under main divisions “Anatomy”, “Biochemistry”, “Embryology”, “Genetics”, “Histology”, “Microbiology” and “Physiology” and sub divisions “Female Reproductive System & Breast”, “Male Reproductive System” and “Pregnancy, Childbirth & Puerperium.” **50 questions**

-----**280 questions this week** ☺-----

Day 28 – Sunday! We actually didn’t get around to doing our test of incorrect questions this day. Hopefully we will get to before next Sunday. Enjoy the day off! ☺

#### **WEEK FIVE**

Day 29 - We started with gram negative and gram positive flow chart practice. Finish “Immunology” chapter of First Aid. Finish “Reproductive” chapter of First Aid. Do questions under main divisions “Pathology”, “Pathophysiology”, and “Pharmacology” and sub divisions “Female Reproductive System & Breast”, “Male Reproductive System” and “Pregnancy, Childbirth & Puerperium.” We only had 25 questions left for all of these main divisions, so we finished those. Then we decided to do 5 random ones, we chose main divisions “Histology” and “Biostatistics” because we had exactly 5 left of those and we could finish off those divisions. Then for the remainder of the study day we worked on 10 questions under ALL main divisions and sub division “Endocrine, Diabetes & Metabolism” because these questions were pretty tough for us (very biochem heavy). We got through **40 questions.**

Day 30 - We started with gram negative and gram positive flow chart practice. Today we read the whole "Pathology" chapter of First Aid which means we FINISHED reading all of First Aid! 😊 Because we had been avoiding "Immunology" questions through most of board studying until we read the chapter last week, we decided to have an immunology question day. We selected "Immunology" under main divisions and ALL under subdivisions and finished as many sets of questions as we could. **50 questions.**

Day 31 – Today I took my first UWORLD Self-Assessment exam. It is 4 blocks of 44 questions and is made to be as close to a USMLE exam as possible. It takes just about 4 hours. It will give you a score report that makes an estimate on how you would perform on the USMLE. At this point, your goal should be to pass the exam and find out what areas need the most work. For me, I realized there was still a lot of work to do on pharmacology (as I expected) and a few random subjects. I had an event to attend for MSUCOM today so I didn't get much else done.

Day 32 – We reviewed the answers to our practice exam all day. Reviewing these questions should go a little bit faster than UWORLD questions, but there are 176 questions to review so it will take a while. I got through three blocks today (132 questions). We will finish the rest tomorrow. Study days are getting longer for us, but today is exactly three weeks away from our exam so it is getting closer to crunch time. 😊

Day 33 – We spent an hour doing pharmacology flashcards with each other (ANS drugs). We would like to become better at recognizing drug names and their classes, we will probably be doing a lot more flashcards in the near future! Then we finished reviewing the last block of our practice test. Then I took a 44 question test over all main and subdivisions and reviewed the answers by first going through correct answered questions, then going through incorrectly answered questions.

Day 34 – This week we decided to take Saturday off instead of Sunday because we had a dinner event to attend so we could plan to use all of Sunday instead. We did a little prep for BLS and ACLS at the beginning of the day then relaxed! Great break!

Day 35 – Today we finished reviewing the big test we took Friday and took TWO more sets of 44 questions under all subjects. We reviewed as many as we could, trying to slim down our annotations so we can get through questions faster. We left the correctly answered questions to review during class tomorrow 😊

## WEEK SIX

Day 36 – Today was the first day of our classes back at Fee so we didn't have as much time to study. I was able to review the test I took last night and had not yet reviewed during class. I also bought the Lange Pharmacology flashcards today. Not sure how helpful they will be yet, but hopefully they are! After classes I finished reviewing any questions I hadn't yet then took two exams of 44 questions each over everything in all main and sub divisions at night so that we have more questions to review during class tomorrow.

Day 37 – Another morning of class, we reviewed as many of the correctly answered questions as we could during class because we didn't feel as obligated to annotate answers into First Aid. After class we reviewed the rest of the questions we hadn't reviewed and took two more sets of 44 questions. We have 602 questions left in UWORLD.

Day 38 – I spent a lot of time during class today trying to memorize the virus flowcharts from the Lippincott Microbiology flashcard set. We also reviewed as many questions as we could the rest of the day.

Day 39 – We had our last day of class today. Afterwards we caught up on our reviewing questions and then took 2 sets of 44 questions to review tomorrow. 514 questions left!

Day 40 – We reviewed the 88 questions from last night and took 88 more questions.

Day 41 – We reviewed the 88 questions from yesterday.

Day 42 – We started the day by taking 88 questions. We did not review them, instead we re-read all of the Cardiology and Respiratory chapters of First Aid. (No Sundays off anymore 😊)

## WEEK SEVEN

Day 43 – We read all of the Psychiatry and Neurology chapters of First Aid.

Day 44 – We read all of the Endocrine and Reproductive chapters of First Aid. We finished around 7 PM so we reviews some of the incorrect questions from the sets we took on Sunday and took the remaining UWORLD questions on "Pharmacology" and "Nervous System" (10 questions).

Day 45 – We read all of the Gastrointestinal and Hematology chapters of First Aid.

Day 46 – (Clerkship orientation in the morning). We read all of the Musculoskeletal, Connective Tissue and Dermatology chapter of First Aid.

Day 47 – We read all of the Renal, Immunology, Pathology, and Pharmacology chapters of First Aid.

Day 48 – We read all of the Biochemistry chapter today.

Day 49 – We spent most of today preparing for ACLS training. When we finished, we read as much of the Microbiology chapter of First Aid as we could.

## **WEEK EIGHT**

Day 50 – We had ACLS training from 7-5 PM. Then we spent some time reading the Micro chapter.

Day 51 - We are two days away from our USMLE. We finished rereading First Aid in the morning. Our goals for today are to read the following specific things that we thought would be good to have fresh in our minds.

- Read the last pages of pages of the First Aid Pharmacology chapter (adverse reactions, overdose antidotes, etc)
- Read any “fun sheets” you made throughout boards studying, as these were usually things that you probably struggled with and could stand to see again
- Review glycogen/lysosomal storage diseases in First Aid
- Review cancers in the reproductive chapter (breast, ovarian, uterine, cervical, vaginal, testicular, prostate)
- Review effects of the various strokes in the Neuro chapter
- Review the histology of the thyroid cancers and thyroid pathologies (Hashimotos, Graves, etc)
- Review the neuro cancers
- Review all of the drugs in the hematology/oncology chapter
- Review the endocrine chapter drugs (mostly diabetes drugs)
- Review the drugs in the pharmacology chapter (autonomic drugs)

Day 52 – Today is our last day before the USMLE and we are reviewing lightly some things that it will be good to have in our heads before tomorrow.

- Reread (and practice some questions) on biostats and ethics
- Find the NBME or NBOME tutorial for the USMLE or COMLEX and watch it and make sure you are comfortable with the software before exam day. The USMLE will look almost identical to UWORLD. The COMLEX is close to how COMBANK looks.
- Reread the defense mechanisms in the Psych chapter
- Practice drawing the bacterial/viral/protozoa charts (emphasis on the bacterial charts, the other two are not tested as heavily and will not help you with as many questions)
- Review zoonotic, food poisoning, and congenital infections in the Microbiology chapter
- Do the rapid review!!! It is the best if you can quiz and be quizzed with someone, you can help explain things to each other and it will really build your confidence.

Day 53 – USMLE! We were happy to have the first exam over with.

Day 54 – We took a day off! ☺

Day 55 – We started reading Saverese (the green OMM book). We read as much as we could, probably about 90 pages.

Day 56 – We finished reading Saverese and memorized Chapman’s points by watching the Anterior Chapman’s points video that I linked at the bottom.

## **WEEK NINE**

Day 57 (& 58) – We have our COMLEX in two days. We are repeating a very similar study plan to what we did the two days before the USMLE (Days 51 and 52). We made sure to review our Chapman’s and Counterstrain points a little bit each day.

Day 59 – COMLEX day! Then free!

### **Sample Study Plan 3: Student Created Schedule 2 (pages 36 – 38):**

#### **Scores**

- NBME 13 (4/23) – 202
- COMSAE D (4/27) – 599
- NBME 15 (5/09)- 228
- NBME 16 (5/16)- 230
- UWorld Self-Assessment 1 (6/04) – 247
- NBME 18 (6/07)- 237
- UWorld Self-Assessment 2 (6/09) - 241 (did 4 blocks/40 of Uworld in the morning before this one)
- NBME 17 (6/10)- 254
- **Step 1 (6/13) – 237**
- **COMLEX (6/17) - 621**

#### **Resources:**

- UFAP (Uworld, First Aid, Pathoma)
- Goljan Lectures + High yield notes (during dedicated study time)+ Rapid Review Pathology (only during the year)
- USMLE-Rx Qbank + some of Kaplan Qbank
- NBMES 2-12 offline + practice tests above
- OMM specific: Green OMM book, COMBANK, crampages (<http://www.gkeonline.com/ilog/crampages.pdf>), and other MSUCOM test review pages made for OMM exams

#### **Throughout the year:**

Started FA in the Fall Semester. Casually read FA with every system we had. I would try and read it before the system began so I had a general overview of what to expect, then try and read it in the middle of the system. Felt it was a good way to organize a lot of the topics we were learning and I would steal the mnemonics that I liked for classes. Started pathoma with our first systems course also. Tried to do the same thing with doing it early and then in the middle for review. I'm big on layering and seeing the information multiple times. Did a few Goljan lectures with our systems courses also (renal and ob/gyn).

I started with USMLE-Rx 1 year before Step. I just did it along with systems. I barely did any USMLE-Rx during dedicated. I think I finished >50% or something of this qbank. It was good and bad – almost useless if you haven't read FA because it's a lot of those nitty gritty facts, but good overall resource. Good introduction for how questions are asked so you have some sort of understanding earlier rather than later. This was great to have when we didn't have many practice questions provided during many of our systems courses. I highly recommend doing practice questions WAY BEFORE dedicated study time comes around.

I did Kaplan Qbank in the Fall before Step. I had an old, offline version that was probably about 75% of the qbank or so. I just used it as a learning tool and wrote down the things I got wrong/felt weird about in a notebook. I re-read these incorrects/explanations at the start of my dedicated period. I finished the ~75% by the end of Christmas break before Step. I pretty much did this all in tutor mode. Around Christmas break I also did a very slow read of pathoma while taking summary notes in every margin (meaning I read every sentence and made sure I knew what it was saying). I didn't really open the pathoma book once during dedicated study time (see below for details on this). I really liked Rapid Review Path (I had the smaller, 3<sup>rd</sup> edition I think). I read it with a few of the systems courses. Never had time for it during dedicated. Read 9 of the intro chapters or something on our Feb or March break. Love Goljan. Pathoma is great for learning, Goljan is great for integrating.

#### **Dedicated study period:**

I was pretty wiped out after respiratory. I felt I needed a lecture style approach but there was no way I was going to pay for DIT. My first week of studying started slow, but I still did full days of studying.

Warmed up to waking up earlier and taking mid-day breaks – pretty much just building a sustainable schedule.

**Morning:** I would wake up and review Micro using some pdfs an upper year had made – it was pretty much FA w/ more pictures and some more explanation. Then I would do a full pathoma chapter of lectures + one or two Goljan lectures. I used Goljan/Sattar pretty much every day and treated them like morning classes.

I haven't really seen this strategy before but this is what I needed to do for the lectures:

- I took hard copy notes of pathoma videos and made them little booklets for each chapter; I then reviewed these rather than the book
- I also made a typed document w/ image for all of Goljan's lectures. I started doing these in the last few weeks of our last systems course starting with the respiratory. It was essentially a transcript of his lectures w/ images and my own little notes beside things he didn't explain fully etc. ended up being about 150 pages after I put the pics in.

**Lunch:** Depending how long lectures would take me, I would then read FA until lunch. Take an hour-long break for work out/shower/reddit.

**Afternoon:** I started the afternoon with questions pretty much every day. I did at least 2 blocks of Uworld every day. I wrote down the answers/main topic for every single question I got incorrect and every single question I guessed on/felt uncomfortable with. I just got a big notebook to put these in. I would write a one-liner about the key concept and maybe some extra information, then I would draw a big line across the page for the start of the next question. Some days I would do 3 or 4 blocks of questions depending on motivation/energy/time/didn't feel like doing lectures. I would often re-write tables I thought were high-yield or were on concepts I hadn't reviewed yet/felt uncomfortable with. I always used Uworld in with All Disciplines, Random, Timed mode.

UWorld is a textbook. It's not just to test what you know, and for building the test-taking stamina. Every single key concept that is the center of a question is important. It is as close as you can get to the real deal.

So I pretty much just used Uworld, First Aid, Pathoma (UFAP) every day. Around the middle of dedicated I started doing blocks of the old NBMEs for extra practice. I would pretty much treat them like regular NBMEs. Sometimes I did two blocks morning and two block after my lunch break. I thought this was great. I would write little notes about these in my notebook about things I got wrong/missed. It was important for me to do a lot of questions.

I did the Pretest USMLE style vignettes book during dedicated for more questions – felt they were kind of useless but were somewhat representative of the kind of left-field questions that people say may appear on the real thing. Don't really recommend this book though.

**OMM/COMLEX:**

I did about 25% of COMBANK a few weeks into dedicated period. This felt like doing flashcards after how hard I had been using Uworld because the question stems are much shorter, generally. Sometimes I would do 1 or 2 blocks of 50 combank questions near the end of a regular day of studying.

I took Step 1 on a Monday and COMLEX on the following Friday. I finished an additional 25% of COMBANK in between the two exams. I had read the Green saverese book on Feb or March break or something so I knew I was exposed to everything at least once. I spent some time skimming the chapters of that book during dedicated and between the two exams. I didn't do any questions out of the book.

I read some old review sheets we had used for our OMM exams during the year for cranial and sacrum and I also read crampages and another high-yield study guide I found along with the youtube videos a few times sporadically during dedicated period. Chapman points and autonomic youtube videos were

helpful – also know the House of Golden. I actually tried to pay attention during OMM and had Dr. Rowan for 3 semesters of OMM in a row so I think I felt pretty comfortable with a lot of OMM concepts before going in. My COMSAE D score was pretty good so I felt I couldn't go down after ~7 weeks of studying so I didn't stress too hard about COMLEX (don't get me wrong though, I was still stressed out about it).

### **Break Times and Relaxing in general:**

- I always woke up early and had my coffee/breakfast while browsing the news and trying to think about other stuff.
- I always took an hour or so off in the middle of the day for lunch/showering/reddit.
- I think I went out for dinner/just hung out with friends at least 1-2 evening per week. Sometimes a little less when I felt like I didn't work hard enough during the day. Sometimes I would go back to studying in the late evening after seeing them if I felt like it. Sometimes we would study together for part of an afternoon, or do questions at least beside each other. We also usually did our practice NBMEs in the same room at the same time – I thought that was pretty nice/supportive. You may hear stories of some friends being a little toxic during this time – my advice is to run away from those people, and people that bring you down in anyway. We had a really good group of supportive friends so that was awesome. This is a good time when friends outside of medicine can be a great support.

I think I burned out in the last 2 weeks of studying. I started freaking out as I was forgetting very simple things. My scores started going up and down and I didn't know what to think. I didn't know if this was because the UWSA scores fluctuating or what, but my last NBME went well so I think I was doing something right (Uworld was calibrating during this time because of the change to 40q/block that happened the year of our exam). I bought the Uworld Biostats Review and pumped it out in an afternoon in an attempt to feel better about my situation – I do not recommend this resource – the explanations are poor and not thorough, only good if you have lots of time and need extra review. I just kept doing questions and studying the stuff I didn't feel super hot on like neuro brainstem and glycogen storage/lysosomal storage diseases.

### **Take homes:**

- 1) Regularly do NBMEs to gauge progress (or COMSAES)
- 2) Do the old NBMEs, and do as many questions as possible
- 3) Work hard and make sure to relax
- 4) Don't slack on OMM and learn as much as you can during the year
- 5) Burn out is real and it is scary
- 6) Take both exams

### **If I could do it again:**

- 1) Do lots more studying during the year and work harder for classes
- 2) Do more practice questions earlier
- 3) Do a bit more OMM/COMLEX review earlier in dedicated period rather than cramming it between USMLE AND COMLEX. My COMLEX score wasn't bad, but it was a little stressful.
- 4) Would probably write it a little earlier so that I was taking the exams during what felt like my peak
- 5) Maybe do sketchy micro – a lot of people that seem to do well use this - I was old school about it I guess

## **Studying for COMLEX**

The key to mastering the material ultimately lies with learning it, both in terms of being able to recall detailed information, but also, perhaps more importantly, being able to *apply* the information to answer specific questions posed on the exam.

- Begin by LEARNING the material well the first time as you study for your course exams – try to avoid “cram and dump” study methods by adopting a “deep approach” to learning. Remember, preclinical academic performance is an important predictor of COMLEX Level 1 performance. Check out the Academic Success Guide for resources covering topics like:
  - Improving long-term retention and recall

- How to study detailed information
- Develop your problem-solving and critical thinking skills alongside your content knowledge. COMLEX requires you to understand underlying principles and concepts so you can utilize your critical thinking skills to reason through the questions. COMLEX questions have a reputation for being more “vague” than USMLE—which really means that they are higher-order questions with a distinctly clinical focus—so a solid knowledge base is essential for success. There may be more than one *possible* answer, but *only one best* answer.
- [MSUCOM Video Modules for Board Preparation](#)
- First Aid, SketchyMedical, and Pathoma are resources used for board prep, but they can also be incorporated into your study routine during your medical school coursework. Many students annotate First Aid with course-based information, thereby creating a customized COMLEX study aid.
- As you advance through your courses, you can also supplement your course materials with Q-bank questions (e.g., Kaplan). This will not only begin to build familiarity with board style questions, but also many students find it a useful approach for their courses. Your first priority, however, is to focus on course content. If you are struggling to stay caught up and learn the material presented in the course, do not be distracted by spending your limited time with board review materials.
- Study *smarter*, not longer. The quality of your study time is more important than the quantity. Spending 10 hours a day *passively* reading study guides or old notes is much less effective than spending half that amount of time in active study.
  - Explain concepts out loud to a study partner.
  - Create concept maps that center on a clinical presentation.
  - Do as many practice questions as you can. Doing practice questions allows you to apply the materials as opposed to just memorizing it.
  - When doing practice questions make sure you can explain why the right answers are right and the wrong answers are wrong. Analyze your results by trying to determine what went wrong.
  - If there are other study methods that work for you, use them – there’s no one right way. That said, don’t simply try to memorize facts.

## Test-taking tips

- Develop your multiple-choice test-taking skills. Learn how to approach multiple-choice questions and get lots of PRACTICE. Some people seem to instinctively know how to answer multiple-choice questions correctly while others struggle. There are skills that you can learn to help you answer these kinds of test questions; for specific suggestions, please refer to “A Guide to Testing Smart on Multiple Choice Exams” in the Academic Success Guide.
- Don’t make the mistake of avoiding practice questions until you “feel” you can get them right. Now is not the time for performance anxiety. Getting questions wrong will help you learn, especially if you pay attention to what you got wrong and why you got it wrong.
- Know how to approach vignette styled multiple choice questions:
  - **ASSEMBLE** key clues into a mental “snapshot” of the patient.
  - **DETERMINE** precisely what is being asked.
  - **TAKE** time to think, recall, and anticipate possible answers.
  - **COMPARE** the options to your anticipated answer.
  - **MARK** the option(s) that best match.
  - **RULE OUT** options that don’t account for all findings.
  - **SELECT** the best answer.
- Low performers on multiple-choice tests often focus on the answer choices rather than on the stem of the question. This is a very inefficient approach and one that tends to result in more mistakes. The answer is in the stem – read the stem carefully.

## Recommendations from MSUCOM students

### Student recommended resources

- Clinical Microbiology Made Ridiculously Simple
- COMBANK/COMQUEST
- PATHOMA = Fundamentals of Pathology
- PEAK/MSUCOM Bootcamp for the Boards with Dr. Sadasivan
- Doctors In Training (DIT)
- SketchyMedical (a picture based mnemonic program)
- Use flash cards and mnemonics, look up definitions and read
- OMT Review (green book by Savarese)
- Use Q-Banks (COMBank, COMQuest, Kaplan, UWorld, USMLErx)
- Lange Pharmacology flashcards
- KAPLAN review materials

### Additional useful resources to guide your preparation

**Book: [How to Study for Standardized Tests](#)** by Sefcik, Bice, & Prerost (2013)

**[Glossary of Osteopathic Terminology](#)**

Standard definitions and nomenclature.

**[Picmonic](#)**

A website for audiovisual learning to help students master and retain critical information.

**[SketchyMedical](#)**

A visual learning tool to help answer questions on the USMLE STEP 1. Narrated lectures that presents microbes and drugs in their own memorable spaces.

### Keep Anxiety at Bay

It is quite normal to be anxious about taking COMLEX; it is, after all, a high stake, gateway exam. But, passing the exam is achievable for all medical students. That said, if your “fight or flight” response is not allowing you to focus on preparation, then you will need to confront your anxiety and seek help.

### Take Care of Yourself While Preparing

Now is not the time to give up on self-care. In fact, quite the contrary, COMLEX preparation is the perfect time to develop or maintain healthy habits. Eating a balanced diet, exercising, and sleeping are not only good for you, they can also reduce stress AND help you learn and retain information. In addition, maintaining relationships with family and friends is also important during this stressful time – you will need a good support network. The key is incorporating these things into your study schedule – actually block out periods of time for meals, for exercise, for socializing, and for sleep.

### What Should You Do if You Fail COMLEX Level 1?

You are not alone! If you fail Level 1, give yourself time to cope with the news and grieve a little, then get back up and plan to try again. Tell your trusted family and friends what happened so you can garner support – don’t keep it to yourself, eventually you’ll have to come clean and the longer you wait, the harder it will be. Importantly, contact the Office of Academic and Career Advising for help. We will be able to talk through your situation, help you figure out what went wrong, and work with you to set up a game plan to be successful on your next attempt. There are many MSUCOM resources available so please seek help. If you are experiencing despair, depression, sadness, and/or are struggling to cope, please seek personal counseling.

Contact:

WHERE DO I GO AND WHO DO I TALK TO WHEN I FAIL MY BOARDS?	
COMLEX 1/USMLE STEP 1 & COMLEX 2 CE / USMLE 2CK	COMLEX 2PE / USMLE 2CS
<ul style="list-style-type: none"> <li>• Kim Peck MBA, Director, Advisor</li> <li>• Dawn Dewar, M. Ed, Advisor</li> <li>• Arie Armbruster, MA, Advisor</li> <li>• Brooke-Lynn Vij, M. Ed, Advisor</li> <li>• Pauline Tobias, MA, Advisor</li> </ul>	<p><b>Susan Enright</b>, DO, Academic Programs  <a href="mailto:Susan.enright@hc.msu.edu">Susan.enright@hc.msu.edu</a></p>

## COMLEX Level 1 FAQ

Are testing accommodations available for COMLEX?

Yes, requests must be made directly to the NBOME following the [outlined procedures](#).

How do I know if I am ready to take the exam?

**Readiness to sit for the exam is best gauged by taking a version of the COMSAE.** The College will provide each student an opportunity to take an embargoed COMSAE. If you receive 450 or higher the College, based on data from NBOME and the College, has determined you are prepared to take COMLEX. If you score <450 you have another opportunity to take COMSAE in order to receive 450+. Keep in mind that receiving 450 or higher on COMSAE does not guarantee a passing score on COMLEX. It simply indicates you have the best chances of getting a passing score when you sit for the exam.

Another factor that can help gauge your readiness is how well you've been performing on your Qbank questions. As your exam approaches, you want to shift from tutor mode to timed un-tutored mode focusing on un-attempted mixed-block questions. By simulating the COMLEX exam (50 questions in a block) and USMLE (40 questions in a block) you can review your performance and identify your weak areas. When you've identified your weak areas you can make a plan for your final study time to ensure that you are feeling comfortable and confident on your exam day.

How many hours per day should I study?

Though research has failed to demonstrate a clear relationship between total study time and academic performance, (Plant et al., 2005), the *range of COMLEX scores* has been reported to increase as one moves from less study time to more study time (Sefcik et al., 2012). One likely interpretation is that some students study a lot but ineffectively, while others see a large positive impact on their test score from time spent studying (Sefcik, 2014, personal communication). In other words, it's quality, not quantity that counts and there is no magical "right" number of hours. Depending on a variety of factors, such as effectiveness of study methods, baseline knowledge/performance, etc., to become truly proficient with the volume of material covered on the exam, plan to study at least 8 hours per day, 6 days per week, and adjust up or down, based on whether or not you are able to stick to your plan and are making adequate progress.

How many weeks should I spend reviewing?

Allow enough time to prepare, but not so much that you get burned out (become apathetic). Although you will have approximately 16 weeks from the time your coursework is over to the deadline for taking Level 1 (July 5th), **four to six weeks should be an adequate time period** in which to prepare. Many students in the past who have taken longer than 6 weeks, later said they felt they took too much time, and actually lost ground toward the end of their studying.

Should I do random (mixed) sets of practice questions or questions that all come from the same subject area (discipline or system)?

The answer is, both (see FAQ below—what is the best way to use my Q-bank?). Completing questions from a single subject area can be helpful, especially if used as a post-test after you've reviewed the related material. However, the real exam is a random mix of questions—you won't know what type of question is next. If you know that all the questions are going to be about physiology or will all cover the cardiovascular system you've already narrowed your focus—your brain is primed to think about things in a certain way. When these context clues are gone, as they are on the real exam, things get more challenging because you are completely reliant on each question, as a stand-alone question, to provide the cues and clues you need to answer the question. The random nature of the exam adds another layer of stress, but one that you can prepare for. Like everything else in life, the more you practice, the better, and more used to it, you become.

## Should I join a formal prep program or go it alone?

This is a very personal decision. Pros and cons are discussed on page 6 of this document.

## What is the best way to use my Q-bank?

Excellent question! There are many ways to approach practice questions. You should consider using all of them as you prepare. The main reasons to do practice questions are: (1) To learn content, (2) To identify weak areas for further review, (3) To monitor progress, (4) To develop test-taking skills, and (5) To develop test-taking endurance and stamina.

- (1) *To learn content.* This is often done by using the “tutorial” function of the Q-bank software. Blocks of questions can be discipline- or system-based or mixed.
- (2) *To ID weak areas.* As you complete questions, especially those answered incorrectly, make note of problem areas. Most Q-banks are capable of generating a performance breakdown as well.
- (3) *To monitor progress.* Taking “practice exams” on a regular basis can help you to determine if you are improving over time. In turn, this information will allow you to evaluate your study strategy and methods—is what you are doing working or might you need to make adjustments? To be as accurate as possible, you should take these practice exams under simulated testing conditions (timed at about 1 minute per question, closed book “no peeking”, and a RANDOM mix of questions from all subjects) and you must try to keep these conditions the same each time you take a practice exam.
- (4) *To develop test-taking skills.* Like any other skill-set, improving your test-taking ability takes deliberate practice. So, in addition to identifying your weak content areas, you should also analyze your performance in terms of how you approach questions. Do you tend to overthink/read too much into the question? Do you second-guess yourself? Do you read too quickly or skim and miss important details? Do you jump to premature conclusions before you’ve read the entire question? Do you focus too much on the answer options and all but ignore the question stem? It is particularly important for you to pick apart questions you got wrong when you were very confident in your answer selection, as this suggests a test-taking “process” or cognitive error as opposed to a simple lack of content knowledge.
- (5) *To develop endurance and stamina.* An 8-hour exam is exhausting and people react differently. Some crash during the afternoon session, but this can potentially be mitigated by eating the right kind of lunch, such as foods that provide sustained energy as opposed to a quick burst followed by a crash. Just as a marathon runner gradually builds up to his target mileage, as a test-taker, you need to gradually increase the number of questions and time of your practice tests, culminating about 10-14 days before your test date with a “mock” 6- to 8-hour exam day. Pay attention to your body—When do you get sleepy? How might you use this information on test day to improve your performance? What foods should you eat? How much water should you drink? Should you bring medication for headaches? Keep in mind that just as marathoners stop distance running a couple weeks prior to a marathon, you must not take long a practice exam within a week of your test date or you may be too fatigued on test day.

Also, remember, you will *never* see any of these practice questions again on the real test. There is no value in repeating the same questions over and over again, which mainly promotes memorization of those specific questions. Instead, keep in mind that anything that seems unfamiliar in a practice question – whether it is information provided in a question stem or in any of the foils – is something you may need to know to answer a different question on the real exam, so review it, learn it, remember it.

## What should I do if I don’t feel prepared to take the exam?

Because you are required to take COMLEX Level 1 prior to entering your Clerkship rotations, a potential consequence of postponing your test date is that you may need to take an extended leave of absence from the College. If you truly feel unable to sit for the exam, you should contact your Academic Advisor in the Office of Academic and Career Advising.

# Are Licensure Requirements Different for Canadian Students?

Possibly, depending on one's career goals. For more information please refer to the [Canadian Student Resource Guide](#)

If you have questions, please contact:  
[com.acadvising@msu.edu](mailto:com.acadvising@msu.edu)

## Board Prep with Practice Questions: Knowing, Thinking & Guessing

Completing numerous practice questions from a board review question bank is probably the single best way to prepare for board exams, providing the greatest return on invested time and effort. Practice questions provide exposure to biomedical science content in a clinical, problem-solving context with concomitant opportunities to hone reasoning skills. Completing practice questions can help identify and fill knowledge gaps, improve test-taking skills, and be used to gauge progress toward a performance goal.

However, to use practice questions most effectively, you must not only do them but also thoughtfully analyze your performance. This requires more than a simple review of the explanation as to why the right answer was right and the wrong answers were wrong.

One way to really put your Q-bank to work for you is to incorporate the KTG method described below. You do not have to do this level of analysis every time you complete a set of questions, but it is *particularly helpful if you feel you are not making sufficient progress or often find yourself surprised by scores that are lower than you expected*. An important goal of this exercise is to provide an objective means of shining a light on problems that may otherwise be cloaked by faulty perceptions. Once a problem is identified, a solution can be sought!

### 10 Steps for Analyzing Your Performance Using the KTG Method

1. Use your question bank to create a block of 25 questions (mixed or subject-based).
2. Use the timed mode.
3. Before you begin, number from 1-25 on a piece of paper—don't skip this key step!
4. Work at a pace of 1 minute per question.
5. For each question, after you've selected your answer but before you move to the next question, write down two\* (2) letters:
  - 1) Your answer selection—A, B, C, D, or E—the one\* you believe is the best option
  - 2) K, T, or G—a *qualitative estimate of your level of confidence* in your answer selection
    - K** = Know = very confident
    - T** = Think = somewhat confident, able to eliminate three (3) or more options
    - G** = Guess = not confident, could only eliminate two (2) or fewer options
6. After completing all 25 questions, tally the number of Ks, Ts, and Gs.
7. Calculate your overall percent correct and mark the questions you got wrong.
8. Calculate the percent correct for each category of questions: K, T, and G. Example: Marked 10 questions as K; got 8 of 10 correct = 80% correct for K.
9. Analyze your results. If your metacognitive skills are working well, you should have a much higher percent correct (>90%) for the K questions, followed by T, then G.
10. Review explanations as indicated on page 2.

\*If you tend to narrow down the options to two (2) and then guess, also record your second choice, but clearly indicate which of the two you would select as your final answer. If you get any of these wrong, check to see if your 2<sup>nd</sup> choice is indeed correct. If neither option is correct, then try to figure out where you went wrong in your thought process because something in the question led you astray.

**What to do with incorrect answers on 'K' questions?** These warrant a detailed evaluation. You should get almost no K questions wrong, but if you do, it may mean you either made a silly mistake (e.g., unintentionally clicked the wrong answer option) or *incorrectly ruled-out the best answer*. This is really important to figure out because **of all the types of errors one can make while answering a question, the latter is irrecoverable**: once you've ruled-out the right answer, there's no way to even guess correctly. If incorrect K questions are more than rare occurrences, the underlying cause may pose a significant barrier to getting a good score. Your combined errors in answer selection *and self-judgment* suggests a problem that goes beyond lack of content knowledge and could mean you misread or misinterpreted the question, jumped to a premature conclusion, overlooked important details, or were over-confident in your understanding of the facts of the question, etc. You must go back to these questions and pick apart your thought process. If you are unsure what your results mean or what to do about it, consider making an appointment with an academic advisor.

- Silly mistakes can be costly, e.g., the difference between a passing and a failing score. If you're making silly errors more than 1% of the time, you may be losing task-focus. Are you sleepy, hungry, distracted by the environment, or plagued by negative thoughts? Sometimes when people are nervous, they forget that determining the right answer is only the first step and a worthless one at that if wandering attention results in absent-minded answer-clicking.

**Reminder**

Be sure to set aside enough money to pay for the exam so you're not caught having to wait for your next loan disbursement.

**What to do about 'T' and 'G' questions?** Regardless of whether or not you guessed correctly, you should thoroughly review the content of these questions because if you're only able to rule out a few options, you have a clear knowledge gap. Take notes and use a review book, such as USMLE Step 1 Secrets, to study this content thoroughly.

**What to do if you have very few 'K' questions and mostly 'T' and 'G' questions?** The answer partly depends on whether you are getting more of these right or wrong.

- If you're *correctly* answering a high percentage of T and/or G questions, you may suffer from low self-confidence that is causing you to doubt your own knowledge and second-guess yourself more often than you should. You would greatly benefit from building your confidence. Using the KTG method on a regular basis might help you learn to trust your "intuition" and come to recognize you know more than you think you do. You may also want to consider personal counseling to directly address the underlying reasons for low self-confidence.
- If you're *incorrectly* answering a high percentage of these questions, you would likely benefit from further content review as well as improvement in test-taking skills.

**What to do if you are answering a majority of questions correctly?** Congratulations! Yet, even if you answer a question correctly, there is an opportunity to learn from it. If even a single detail was unfamiliar, review it because the real test could have a question about it. If you're doing well, but want to improve even more, think about how you could change the details of the vignette to make each wrong answer right, or try to imagine other questions based on the same vignette. For each clinical vignette, you could potentially ask many different questions: about the etiology, diagnosis, or treatment of the patient's problem; about the relevant anatomy or histology; about the underlying mechanisms involved in the immunology, physiology, pathophysiology, genetics, or biochemistry; about the microorganisms involved; about the pharmacology; or about principles and techniques of OPP/OMT, etc. Each question provides a world of possibilities to expand your knowledge and skills.

## Factors to Consider When Selecting a Test Date for COMLEX Level 1 / USMLE Step 1

### What are MSUCOM's requirements for taking COMLEX Level 1?

- Students *must* sit for COMLEX Level 1 prior to entering the Clerkship program (for specific policy language, please refer to the appropriate [College Retention Policy](#)). There is no MSUCOM requirement pertaining to USMLE Step 1—it can be taken at any time.

- Students *must* obtain a score of 450 or higher on COMSAE before being allowed to sit for COMLEX Level 1. If a student does not achieve the cut score of 450 on either the 1<sup>st</sup> or 2<sup>nd</sup> COMSAE provided by the College, authorization to sit for COMLEX Level 1 will be withdrawn by MSUCOM and the student will need to either cancel or reschedule their exam date ([NBOME Exam Fees](#)).

### **When should you *sign up* for your COMLEX Level 1 test date?**

In November of Semester 5 each student will receive a unique ID number from NBOME, which is required for COMLEX registration and exam date selection. Though you will not actually sit for the exam until after Semester 6 is completed (timeframe discussed below), once you receive your ID number you should *register with NBOME and [select your test date](#) as soon as possible*. You can always reschedule at a later time if, for example, you feel underprepared as your test date approaches or a more optimal test date becomes available ([NBOME Exam Fees](#)). If you are at all uncertain about what to do, it is recommended that you meet with an Academic Advisor to evaluate your circumstances and determine your best course of action.

For procedural steps related to registering for the USMLE Step 1, please contact the [MSUCOM Office of the Registrar](#).

### **When are COMLEX Level 1 and USMLE Step 1 *usually* taken?**

Once the 450 COMSAE cut score has been achieved, a student can take COMLEX Level 1 at any time during the period from about mid-May through mid-July, depending on the availability of test dates at [Prometric Testing Centers](#). Those who opt to sit for USMLE Step 1 usually schedule their exam within 7-10 days on either side of their COMLEX test date. *The majority of MSUCOM students have test dates that fall within the second half of June.*

### **Individual/personal factors to consider when selecting *your* COMLEX Level 1 test date**

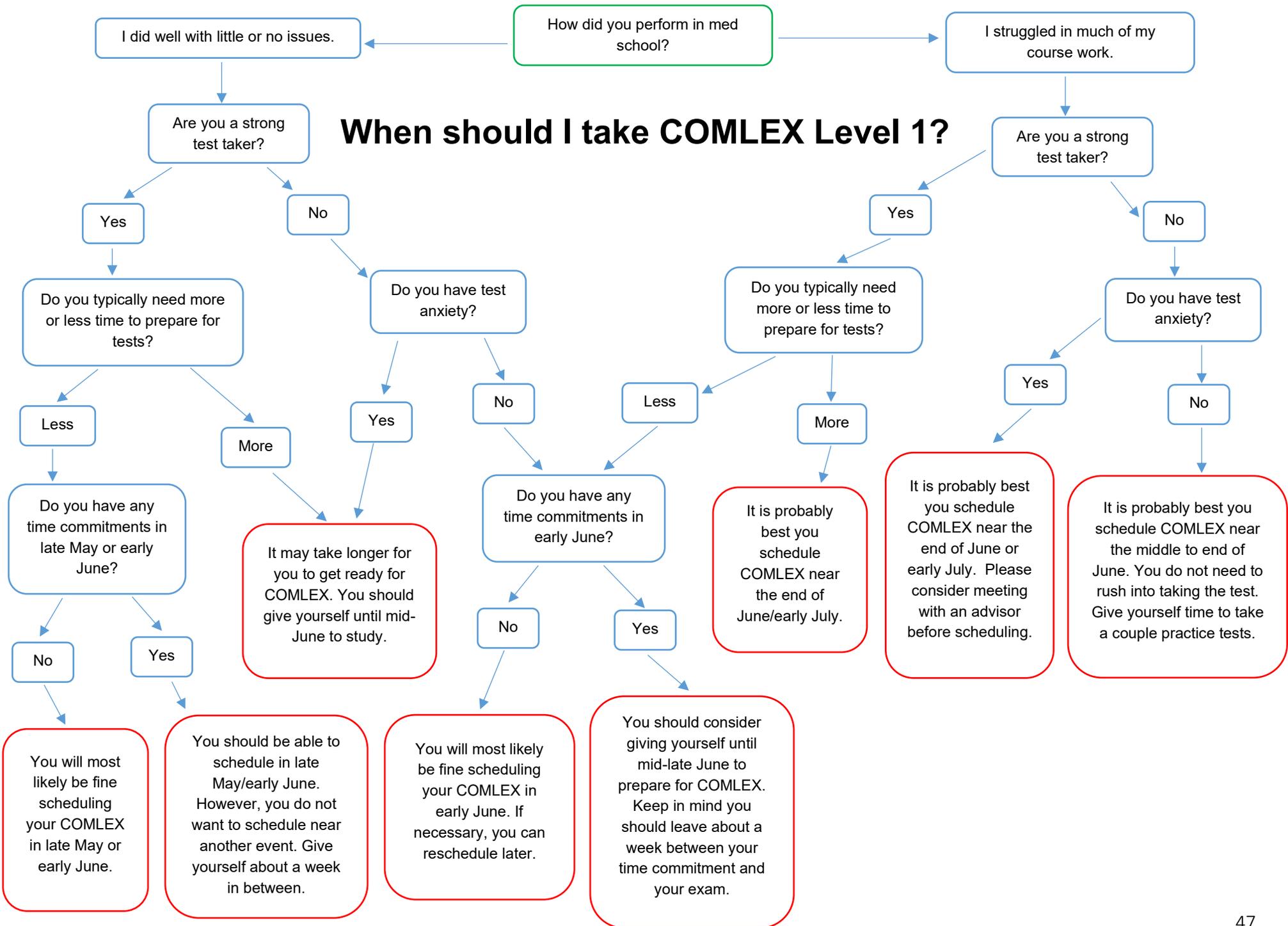
Academic risk factors are by far the most important consideration when selecting a test date. These include (1) low MSUCOM class rank (bottom quintiles) and/or MSUCOM course percentages *consistently* below 85% and/or multiple course failures, (2) below average first attempt scores on previous standardized exams, and/or (3) high anxiety and/or low confidence levels relating to standardized tests in general or COMLEX specifically.

Some students are able / ready to take COMLEX earlier than others; there is no “one size fits all” test date. *Any student who is at high risk for low performance based on their academic risk factors should leave an adequate amount of time for thorough preparation*. This generally means scheduling a later test date (latter half of June – mid-July). It is inadvisable to take the exam early (e.g., prior to mid-June) simply to get it over with and/or to allow time to go on vacation or attend to personal business prior to the start of rotations.

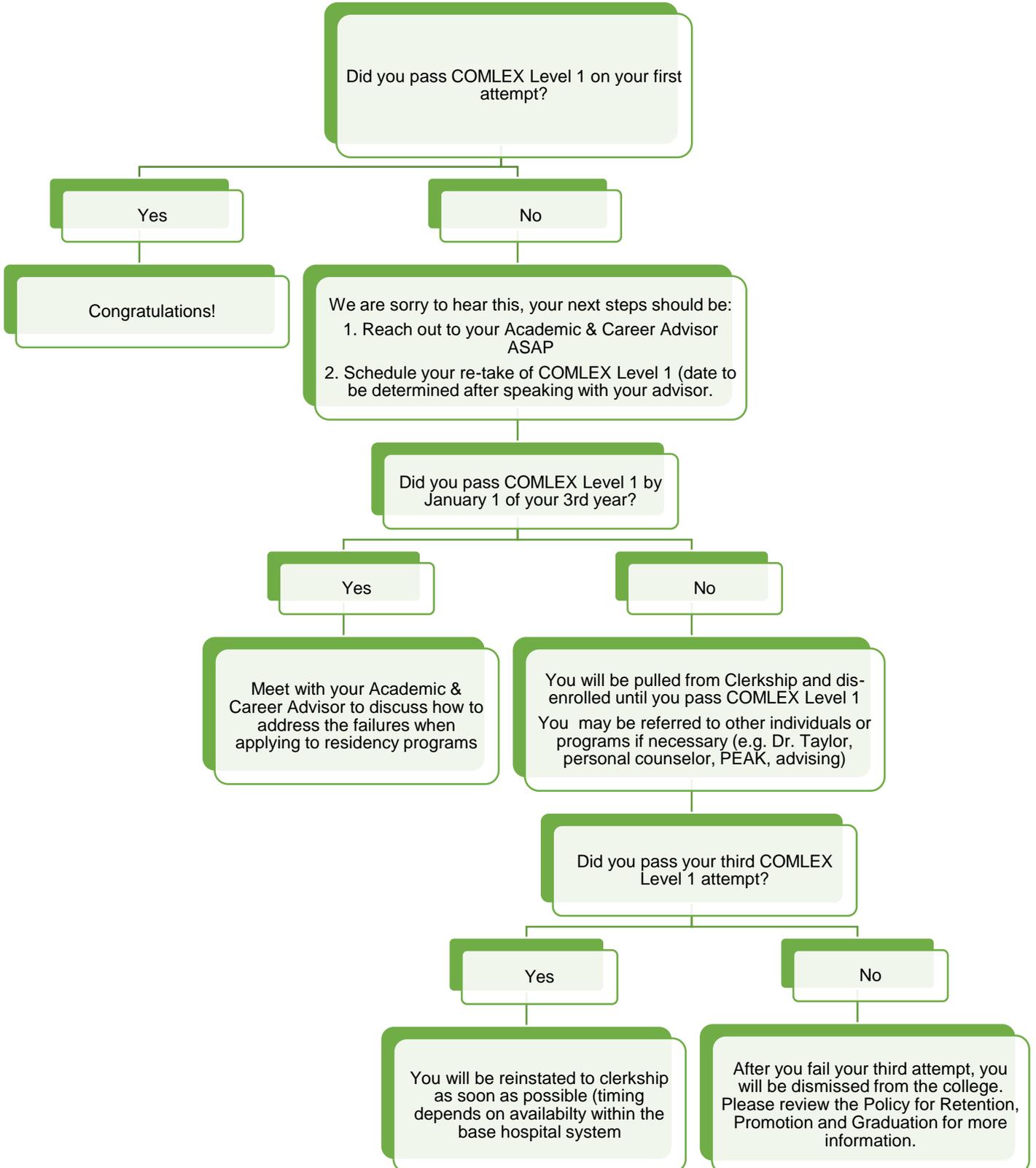
To avoid scheduling conflicts and to ensure a sufficiently focused preparation period, make sure to consider the following additional factors:

- MSUCOM Just-in-Time Clerkship Orientation
- Personal obligations, such as moving to base hospital location, required military training, or course remediations
- The timing of any other pre-planned personal events, such as weddings, graduations, family reunions, travel, etc.

# When should I take COMLEX Level 1?



# COMLEX Level 1 Requirements



## Should You Take USMLE Step 1?

A growing number of osteopathic medical students are opting to register for the United States Medical Licensure Exam (USMLE), the allopathic equivalent to the COMLEX. This number has increased with the movement toward a single GME accreditation system. Historically, compared to their allopathic counterparts, osteopathic students had a lower first attempt pass rate on USMLE Step 1; however, more recent data presents a different picture with approximately 92% of DO students passing on their first try. In addition, a survey showed that 70% of graduating osteopathic medical students recommended that osteopathic students take USMLE Step 1; the most often cited reason was "to keep options open" (Hasty et al., 2012). These results are similar to those of a previous study (Punswick et al., 2006).

*So, what should you do?*

Rather than making a decision based on national trends, each student must weigh a variety of individual factors, such as: class rank, MCAT score/standardized testing ability, test anxiety, and specialty choice/preference. Other variables, which may be more difficult to gauge at the end of the second year are whether or not (1) you intend to stay in Michigan, and (2) your preferred program has a pronounced osteopathic presence (i.e., is D.O. friendly, related to the number of DO students typically accepted into the program). The decision of whether or not to take USMLE involves weighing risks versus benefits: relatively straightforward for some but complicated for others.

- Students with a substantially *high risk for underperforming* are those who have low class rank (especially bottom quintile), low first-time MCAT score, and high level of test anxiety.
- Students *least* likely to need to take USMLE are those who plan to stay in Michigan and are interested in primary care.
- Students *most* likely to need to take USMLE are those seeking allopathic programs, especially those that are competitive, outside of Michigan, and do not have a strong D.O. presence.

You can use the FREIDA Online® database to research the board exams accepted by each program. If COMLEX is not listed, they may not accept it; however, it is always prudent to double-check with the program coordinator directly to ensure that you have the most up-to-date information.

If your preferred program *requires* a USMLE score to be considered for an interview, but you are at high risk for underperforming on the exam, it is important to discuss your options with an academic/career advisor. And always, when in doubt, talk to an academic/career advisor.

If you opt to take USMLE, the good news is that the study strategies and most of the resources used to prepare for the USMLE Step 1 are the same as those used to prepare for COMLEX Level 1. For your Q-bank, plan to purchase either USMLE-Rx or UWorld. Unlike COMLEX, USMLE Steps do not have to be taken in order, e.g., Step 2 can be taken before Step 1.

- [FREIDA Online](#)
- [Bulletin of Information](#)
- [United States Medical Licensing Examination \(USMLE\)](#)
- [National Board of Medical Educators \(NBME\)](#)
- [FAQ on scores](#)

## NBME (USMLE) LICENSING EXAMINATION PROCESS

You must be officially enrolled at MSUCOM in order to submit an application and/or take a USMLE exam. If you are dismissed, withdrawn or suspended from medical school, you are not eligible for USMLE, even if you are appealing or contesting your status.

- Obtaining a USMLE ID number:
  - Go to [www.usmle.org](http://www.usmle.org)
  - Select the Applications & Fees tab
  - Select Apply (link in first box)
  - Select "First-time user? Register here>>" under login
  - Complete and submit your on-line request (you will receive an email from NBME with your ID # and password within one business day)

Application Process

- Step 1 - Registration:
  - Go to the [NBME Registration Website](#)
  - Continue through each page completing requests for information
  - Print the Certification of ID form and make payment for the exam
- Step 2 – Certification of Identification and Authorization Form:
  - Sign the back of your photo and affix your photo to the certification form. The photo must clearly show your full face, be current and approximately 2" by 2". A color photo is not required.
  - Take (EL students) or mail (DMC / MUC students) your certification form to the MSUCOM Office of the Registrar. Your form will be signed by a school official affixed with the school seal and mailed to the NBME.
- Step 3 – Scheduling exam date:
  - NBME will add your name to a roster for your medical school to verify your eligibility.
  - NBME will issue you a scheduling permit after your registration status is complete.
  - Once you receive your scheduling permit follow the instructions outlined. Print your appointment confirmation notice after scheduling.
  - Confirm your appointment one week in advance and arrive to the test center at the time specified on your confirmation notice.
  - At the testing site you must present your scheduling permit and an unexpired, government issued form of identification that includes both your photo and signature.

## Should Osteopathic Medical Students Take the USMLE Step 1?

### D.O. Students and USMLE Step 1

A growing number of osteopathic medical students are opting to register for the United States Medical Licensure Exam (USMLE), the allopathic equivalent to the COMLEX. This document takes a look at the National Statistics from NBME as well as data collected from MSUCOM. This information is reflecting averages only for students who took USMLE & COMLEX

USMLE Step 1 First-Time Test-Takers from US/Canadian Schools	2017		2018	
	Students Tested	Percent Passing	Students Tested	Percent Passing
MD Degree	20,353	96%	20,670	96%
DO Degree	3,786	95%	4,092	96%

\*information can be found by searching the [USMLE Performance Data](#)

Class of 2019 Exam Taken 5/26-8/14/2017	All	1st Quintile	2nd Quintile	3rd Quintile	4 <sup>th</sup> Quintile	5th Quintile
Took USMLE N	168*	11	28	37	39	52
USMLE Failures N (%)	3 (1.8%)	1 (9.1%)	1 (3.6%)	1 (2.7%)	0 (0%)	0 (0%)
AVG USMLE S1 Score	224	215	214	216	226	237
AVG COMLEX L1 Score	604	510	546	567	611	677
AVG Ugrad SCIGPA	3.61	3.28	3.58	3.57	3.62	3.73

\*\*14 took USMLE outside of 5/26-8/14/2017 window, not included in calculations.

\*1 took USMLE but does not have quintile rank, included in totals

Class of 2020 Exam Taken 5/29-8/13/2018	All	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile
Took USMLE N	174	10	28	34	49	53
USMLE Failures N (%)	4 (2.3%)	2 (20.0%)	1 (3.6%)	1 (2.9%)	0 (0%)	0 (0%)
AVG USMLE S1 Score	226	213	215	218	227	240
AVG COMLEX L1 Score	572	505	513	538	571	639
AVG Ugrad SCIGPA	3.63	3.47	3.51	3.58	3.59	3.78

\*\*15 took USMLE outside of 5/29-8/13/2018 window, not included in calculations.

## MSUCOM USMLE Data

Year	2018	2019	2020	2021
Students Registered for USMLE Step 1				223
USMLE Step 1 Takers	126	175	188	147
USMLE Step 1 Failures	10	4	4	
Students who did not take USMLE Step 1	141	97	124	
USMLE Step 2CK Takers	78	113	114*	
USMLE Step 2CK Failures	1	1	0	
Students Registered for USMLE Step 2CS			8	
USMLE Step 2CS Takers	12	11	3*	
USMLE Step 2CS Failures	0	0	0	
<b>Table only showing May Grads</b>				
*test takers are through 8/6/19 will be updated as the year progresses				

## COMLEX Level 2-CE

### Description of the Exam

Much of the information provided about COMLEX Level 1 is also applicable to the Level 2 Cognitive Evaluation (CE). A similar clinical problem-symptom-based approach is used in both Level 1 and Level 2. The primary difference is the Dimension 2 emphasis. On Level 1, 75% of the questions tested scientific understanding of mechanisms because the exam is designed to test the knowledge and cognitive skills that would normally be acquired during the first two years of medical school. This is not the case for Level 2, which emphasizes History and Physical Examination (30-40%) and Health Promotion and Disease Prevention (15-20%), followed closely by Diagnostic Technologies and Management (10-20% each). This is because COMLEX Level 2 is designed to test the knowledge and skills that would normally be acquired during the Clerkship portion of medical school. Rather than basic sciences, the discipline areas on Level 2 fall are medical specialties, represented by the core rotations: Family Medicine, Internal Medicine, Emergency Medicine, Pediatrics, OB/Gyn, Surgery, Psychiatry, and OMM.

### Test blueprint

Adequate preparation should begin with an understanding of what you will be tested on. As with Level 1, students should become familiar with the test blueprint:

### When Should You Take COMLEX Level 2-CE?

MSUCOM does not mandate a date by which students must take COMLEX Level 2; however, passing Level 2-CE and PE is a graduation requirement. Most students take the exams at some point between April of their 3<sup>rd</sup> year and August of their 4<sup>th</sup> year, some earlier, some later. Because of the clinical emphasis, it is wise to complete as many core rotations as possible prior to sitting for the exam. Students find they feel most prepared to take Level 2-CE while these subjects are still relatively fresh in their minds.

Many students take their Level 2 exams before interview season begins to allow for a more flexible travel schedule, and some residency programs require applicants to have a Level 2-CE score posted in order to be considered for an interview. Furthermore, some programs begin to rank applicants in late fall or early winter, and *applicants who have not yet obtained passing scores on COMLEX 2-CE and PE may not be considered for ranking*. This is because completion of these exams is required for graduation, licensure, and starting residency on time. Be sure to research program requirements so you can time your exam appropriately.

The decision regarding when to take the Level 2 exams needs to be made thoughtfully and by carefully evaluating one's circumstances. Though students may want to consider taking Level 2-CE and PE earlier rather than later out of concern for not being able to match if they don't have a passing score, this must be balanced against the risk of poor performance or failing if taken too soon. Rushing to take Level 2 out of fear, and consequently failing one or both exams due to inadequate preparation, does not improve one's likelihood of

matching. Students with low Level 1 scores may wish to take Level 2-CE earlier, hoping to demonstrate an improved score on their application, and some mistakenly believe that if they fail Level 1 they are likely to do better on Level 2 because “it is more clinical.” To the contrary, MSUCOM students who obtain a below average or failing score on Level 1 are at a *significantly higher risk for failing Level 2-CE*. Any student who is in this situation should discuss their COMLEX Level 2 preparation plan with an academic advisor.

## How Should You Prepare for Level 2-CE?

Preparation for Level 2-CE begins with your first rotation, just as preparation for Level 1 began with Anatomy in the first semester. Be as engaged as possible in all rotations, regardless of your level of interest in that specialty, try to learn as much as possible from patient encounters and from the attending physicians, residents, and other medical students with whom you interact. Try to read a little every day about the cases you’ve seen, and study in earnest for your COMAT exams.

As with Level 1, it is useful to gauge your baseline performance, either by taking a version of COMSAE Phase 2 or by creating a practice test using your Q-bank of choice. It is also important to be familiar with the test blueprint, create a study schedule, identify key resources, do practice questions, and assess your progress with practice tests. Many students use vacation time to take a week or two off right before the exam for an intensive review, but a great deal of studying must be done while you are rotating.

While not essential, it is highly advisable to have completed all primary care discipline rotations (FM/IM/Peds/OBGYN), including the IM and FM sub-internships, prior to taking COMLEX 2 CE to maximize exposure to relevant topics.

## Recommended resources for Level 2-CE

Most of the resources for COMLEX Level 2 are the same as those used to prepare for USMLE Step 2.

Review:

- First Aid for USMLE Step 2 CK
- Step-Up to USMLE Step 2: A High-Yield, Systems-Based Review for the USMLE Step 2
- USMLE Step 2 Secrets – case-based (clinical vignettes with Q&A) review
- First Aid Cases for the USMLE Step 2 – case-based (clinical vignettes with Q&A) review
- OMT Review by Savarese – the gold standard OMM review book (“the green book”)
- [OnlineMedEd](#)

Q-banks:

- [USMLE-Rx](#)
- [UWorld](#)
- [COMBANK](#)
- [COMQUEST](#)

## [COMSAE](#)

For a more detailed discussion of what you need-to-know from references often used by C2CE item-writers:

- Harrison’s *Principles of Internal Medicine*
- Schwartz’s *Principles of Surgery*
- Tintinalli’s *Emergency Medicine*
- Nelson Textbook of *Pediatrics*

For a broad overview of relevant legal and ethical concepts and practice questions:

- Fischer, Conrad, and Caterina Oneto. *USMLE Medical Ethics: The 100 Cases You Are Most Likely to See on the Exam*. New York, NY: Kaplan, 2009. Print.
- Lewis, Marcia A., Carol D. Tampo, and Brenda M. Tatro. *Medical Law, Ethics & Bioethics for the Health Professions*. 7th ed. Philadelphia: Davis Plus, 2012. Print.

Student recommended resources for ethics topics:

- Case study: Catlin A (1996). The dilemma of Jehovah's Witness children who need blood to survive, *HEC Forum*, 8(4): 195-207. <http://link.springer.com/article/10.1007%2F00056549>

## What Should You Do if You Fail?

WHERE DO I GO AND WHO DO I TALK TO WHEN I FAIL MY BOARDS?	
<b>COMLEX 1/USMLE STEP 1 &amp; COMLEX 2 CE / USMLE 2CK</b>	<b>COMLEX 2PE / USMLE 2CS</b>
<ul style="list-style-type: none"><li>• Kim Peck MBA, Director, Advisor</li><li>• Dawn Dewar, M. Ed, Advisor</li><li>• Arie Armbruster, MA, Advisor</li><li>• Brooke-Lynn Vij, M. Ed, Advisor</li><li>• Pauline Tobias, MA, Advisor</li></ul>	<p><b>Susan Enright, DO</b>, Assistant Dean of Clerkship Curriculum <a href="mailto:Susan.enright@hc.msu.edu">Susan.enright@hc.msu.edu</a></p>

## COMLEX Level 2-PE

### Description of the Exam

The COMLEX Level 2 Performance Evaluation (PE) is taken near the beginning of the 4<sup>th</sup> year of medical school. During this clinical skills exam, students encounter 12 standardized patients (SP) over the course of a 7-hour day. Examinees have 14 minutes for each patient encounter and 9 minutes to complete an electronic SOAP Note. The skills evaluated fall under two domains:

#### Biomedical/Biomechanical Domain

- Osteopathic Principles and/or Osteopathic Manipulative Treatment
- History-taking and Physical Examination Skills
- Integrated Differential Diagnosis and Clinical Problem-Solving
- Documentation and Synthesis of Clinical Findings (SOAP note format)

#### Humanistic Domain

- Physician-Patient Communication, Interpersonal Skills, and Professionalism

### Where to learn about the Level 2-PE

[You can find more information on the NBOME website.](#)

### How Is the COMLEX Level 2-PE Graded?

Students must pass both the biomedical/biomechanical *and* the humanistic domains to pass Level 2-PE. There are three graded components that contribute to the overall score:

- (1) The **vast majority of the score is based on the SP evaluation**; their perspective as the patient *is key*.
- (2) SOAP note documentation, which is graded by DOs, and
- (3) OMT skills, which is graded by OMM-raters (DO physicians trained to evaluate OMT skills).

### Why Do Students Fail the COMLEX Level 2-PE?

Unsuccessful students typically: (1) lack insight into how they will be graded – namely by the SPs, (2) do not understand that the exam is about *process*, not content, and/or (3) rely almost exclusively on using a PE board review book to prepare. Whatever the reason, the net result is that most students fail because they do not perform a patient-centered history and physical – e.g., they don't look at the patient, their body language is closed off, they fail to develop rapport, they don't convey empathy – and the SPs (rightly) assign a low score.

A student will not fail simply because s/he forgot bits and pieces of the physical exam or failed to ask an appropriate history question during one or two of the encounters; however, repeatedly committing the *same* error(s) is obviously much more significant. It is worth noting that students rarely demonstrate gross deficits in the biomedical / biomechanical domain, yet this is often the focus of exam preparation.

## Failure is a “Red Flag”

Take this exam very seriously! **Failure of this portion of the COMLEX is a “red flag” to residency program directors**, even if scores on the cognitive exams are good (i.e., COMLEX Level 1 and Level 2-CE). Although you should do everything in your power to not fail the exam, at the same time, you mustn't be intimidated. This exam evaluates skills you practice and hone every time you interact with a patient. While on your rotations, be observant of how your preceptors treat patients and how patients respond to your preceptors – if you believe that what they do is not “right,” that their DPR skills seem far from ideal, and/or that patients do not seem to respond well, then do not emulate them. “But that’s how my preceptor does it” is not a valid excuse for poor performance.

## What successful students do

- Spend time on the NBOME web site and read the Orientation Guide prior to the exam.
- Wash their hands at the beginning of each encounter.
- Place the stethoscope directly on the patient’s skin, not over the gown.
- Lay the patient down to do an abdominal exam.
- And **demonstrate the osteopathic principles of patient-centered care at all times.**

## When Should You Take Level 2-PE?

Many students want to take Level 2-PE well before the end of their 3<sup>rd</sup> year; however, this desire must be balanced against the potentially negative consequences of failing. It is important to thoroughly prepare. Plan to take the PE at or near the end of your core rotations, and particularly after you have completed EM, FM, and IM; these rotations provide practice with a variety of patients/patient presentations. Check with the residency programs to which you are applying to learn if they require you to have taken (and passed) the exam to be considered for an interview. Also, as noted previously, some programs begin to rank applicants in late fall or early winter, and *applicants who have not yet obtained passing scores on COMLEX 2-CE and PE may not be considered for ranking*. This is because completion of these exams is required for graduation, licensure, and starting residency on time. Schedule the PE for the earliest available date that enables you to become fully prepared.

## How Should You Prepare for Level 2-PE?

There are essentially five things you should do to prepare: (1) **Review the [Orientation Guide on the NBOME website](#)** so that you fully understand what this exam is about, (2) Practice your DPR, history-taking, PE, and OMT skills, (3) Get (and use) critical feedback from peers, residents, and preceptors, and (4) Take full advantage of the LAC experience provided by the College (5) complete the COMLEX Level 2PE Simulation provided by the college.

## MSUCOM PE Simulation

Prior to taking the COMLEX PE, you must first take and pass the MSUCOM PE Simulation. This simulated exam occurs at the Learning Assessment Center (Fee Hall in East Lansing). It is not offered at any other location. We have done our best to mimic what we have learned about the actual COMLEX PE in hopes to best prepare you. Prior to the MSUCOM PE Sim event, you will have prep material (reading, videos, etc.). Most of this preparation material is located on the [NBOME website](#). In the MSUCOM PE Sim event, you will see four standardized patients. Faculty will be reviewing and providing you feedback on these encounters. Some students have needed to repeat the simulation event because of this feedback. Due to the time for feedback and the possibility for repeating the MSUCOM PE Sim, it is highly suggested that you schedule your MSUCOM PE Simulation and your COMLEX PE **at least 45 days apart**. This allows you to not only receive the feedback, but also incorporate that feedback into your patient care before the COMLEX PE. Students do incur costs for short-term cancellations of their COMLEX PE's. Please review the NBOME website to review the incurred cost for cancelling/changing dates. In the event that you would be required to repeat the MSUCOM PE Sim, hence, cancel, and reschedule your COMLEX PE, spacing out the MSUCOM PE Sim and the COMLEX PE will decrease that cancellation cost. No time less than 30 days in-between, the MSUCOM PE SIM and the COMLEX PE will be allowed by MSUCOM. If you schedule them less than 30 days, MSU will revoke your eligibility for the COMLEX PE.

*When can you sign up for the MSUCOM PE Sim?* You will receive an email from the address [mlseladmin@hc.msu.edu](mailto:mlseladmin@hc.msu.edu). This email is from the Learning Assessment Center in East Lansing (where the MSUCOM PE Sim occurs) and will provide all the information you will need to sign up for the MSUCOM PE Sim. You can begin signing up for the sim on receipt of that email. **Once you have established your MSUCOM PE Sim date, and have passed the COMLEX Level 1 exam**, feel free to sign up for your COMLEX LEVEL 2 PE.

*When can I expect my preparation material once I sign up for the MSUCOM PE Sim?*

Your will receive an email from Eric Dunckel, clerkship assistant, approximately one month prior to the simulation event. The email will contain all the information you need.

*Will I be in East Lansing the entire day?*

Yes. You will be in the sim lab for one half day and in the OMM lab the other half day. The OMM department will be reviewing material that you will find helpful for the COMLEX PE.

### Throw away your PE board review book!

If you choose to utilize a board review book, then use the book to *enhance*, but **not change**, what you normally do. Review books emphasize algorithmic, mnemonic-based approaches, and often make claims that, “if you complete all the checklist items, you will pass.” However, Dr. R. T. Scott (Osteopathic Physician and Director of MSUCOM Preclerkship Curriculum) offers a cautionary note, “memorizing and demonstrating a straight algorithmic approach to the patient will reinforce the perception of a DOCTOR focused encounter. Clinical encounters (not just for testing) should be PATIENT focused. It’s advisable to demonstrate PATIENT focused care at every opportunity during these encounters.” By the way, this is the basis for excellence in Osteopathic Care of all patients. As one example of a simple way to be more patient focused, Dr. Scott suggests you *literally* push your chart aside and look at your patient. If you need to write something down, say, “I think what you just said is important, so I’m going to write it down.” Include the patient in your process, make eye contact, and make sure s/he feels cared for. During the exam, let patients know what you’re going to do and don’t hurt them. These things matter to patients and they matter to SPs. They are important to you because they can make the difference between Pass and Fail **and** doing them will make you a better clinician.

### Get as much feedback as possible

Practice physical exam techniques, OMM, and DPR skills with a skillful peer or resident – someone you trust to give you honest feedback, not just tell you what you want to hear. As your test date approaches, on any rotation, ask a preceptor you trust to evaluate one of your patient interactions; explain that you will soon be travelling to Conshohocken so they understand the importance of providing critical feedback. In addition, MSUCOM provides a simulated Level 2-PE for practice. Sometime between January and April of your 3<sup>rd</sup> year you will be scheduled for a day in the Learning Assessment Center (East Fee Hall in East Lansing).

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### MSUCOM PEAK Learning Center

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Email: [Mick.Goldynia@hc.msu.edu](mailto:Mick.Goldynia@hc.msu.edu)

## Resources

### Other Cited Works

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- Plant EA, Ericsson KA, Hill L, and Asberg K (2005). Why study time does not predict grade point average across college students: Implications of deliberate practice for academic performance, *Contemporary Educational Psychology*, 30: 96-116.
- Sefcik D, Church B, Falls J, and Petsche E (2012). Bulking up COMLEX level 1 scores: What preparatory behaviors enhance performance? AACOM Annual Meeting, Poster Presentation.
- <sup>1</sup>Bowen JL. Educational strategies to promote clinical diagnostic reasoning. *NEJM* 2006;355;21:2217-2225.  
<http://www.nejm.org/doi/full/10.1056/NEJMra054782>

### Additional Advice

<http://www.benwhite.com/medicine/how-to-approach-nbme-usmle-questions/>  
<http://www.benwhite.com/medicine/qbanks-usmle-success-optimism-excitement-and-joy/>