Dr. Leisman's (and friends) Guide to Being an Outstanding Medical Student

Created 2018, updated substantially with surgical tips in 2020

(All opinions are my own and based on experiences with MS3 and MS4 on elective with me and their stories. May be best suited to Medicine clerkship, but feel free to adapt to the others).

1. **Read up on your patients! Most of you will get a patient who already has a diagnosis. Expect that you will be asked questions about it. They want you to learn it yourself, not teach you about it.**
    a. Start with UpToDate. Use it as a jumping off point.
    b. Know mechanism of disease, symptoms, presentation, treatments
    c. Impress people by looking up recent data on some aspect of the case (can be diagnosis, treatments, prognosis, etc)
    d. Know the risks, benefits and side effects of treatments that are given
2. **Don't ask stupid questions. They will tell you there is no such thing, but you will be judged if you ask something that you could look up yourself.** Ask questions on complexities of management, or clinical reasoning ("The patient had SOB and crackles, what pushed you toward CHF over pneumonia or PE?" or "How do you decide to give IV Lasix over PO Lasix" are great questions; please do not ask "what is Lasix?" or "What are the Wells Criteria?")
3. **Be helpful! This is where you can really shine, because you have more time and lots of downtime. Your residents may not ask you to do these things, do them on your own. Some examples:**
    a. Get collateral information on your patients:
        i. Call pharmacies for med rec on patients who aren't sure what they are on (get names, doses, and when Rx was last filled -- can be really important)
        ii. Track down PMDs, nursing home staff for transfers from NH, family members, and call them for details
        iii. Call outside hospitals or NH for details on prior labs, imaging, culture results
    b. Take time with your patients -- help them understand their diseases, teach them why it matters to take medications, understand the challenges they face that may be impacting their care. You may be the one to discover they can't take insulin bc they don't have a fridge to store it in or they keep coming in w CHF exacerbations because they can't cook for themselves and have to eat take out, or that their insurance won't pay for their NOAC. Then, use that information to make suggestions or to speak with the social worker about options.
    c. Go to radiology to go over your patient's imaging. You will learn, you will provide important context to the radiologist, and you can report back to your team what you've learned. I've never met a radiologist who didn't love to discuss the findings.

    d. Call a patient's PMD upon d/c and tell them what's been going on, what they should look out for, and what is new.

4. **Find opportunities to talk to consultants and to learn**. Ask heme to show you the smear. See if GI will let you watch them scope your patient. You can teach your team something important, and also may gain a new mentor. Stay away from text messages if possible. People don't explain over text.
5. **Scutwork:** no one wants to do it. But if your intern and resident are really busy, you helping out with those tasks may free them up to teach you.
6. **Check every medication the patient is receiving via the IV when you preround-- drips, abx, etc. Check the foley bag and ask the nurse when it was last emptied.** Know them on rounds.
7. **Be proactive**
    a. Look up papers and give evidence when you present.
    b. If there is an interesting patient on your team, read about that patient. Your residents and interns are busy, and will say things like, "we should really look into if X is associated with Y" -- offer to do it! You will practice your EBM skills and learn something new.
    c. However, when you know this information, tell it to your intern/resident before rounds. Then they can shine, and will owe it to you. Reporting it on rounds in front of the attending, after your intern/resident is stymied by the question, may not win you so many points. {*I have mixed feelings about this -- I was told to add it by a 4th year student bc you don't want to show up the intern. But really I feel like the finder of the info should get the credit -- I guess just feel it out*}
8. **When you present, always start with the chief complaint. It helps focus your listeners. When you call a consultant, always start with the reason for the consult (it may not be the reason the patient came to the hospital).**
9. **Be honest about who you are when you call consultants. I love to teach 3rd year med students, will adapt my teaching to them, and won't have as high expectations for presentation and knowledge**. If you don't make it clear at the beginning, they will think you are a resident and expect a lot more. By the same token, ask your resident what types of questions the consultant may ask you, so you can be prepared (ie: if you are calling a renal consult, please know the results of the UA and potassium and if the patient is making urine. If you are calling a GI consult, you will be asked if the patient is guaiac positive.)
10. **Don't be late. Ever. Your team will not wait for you.** Always text to say why you aren't there, and when you will be.
11. **You are a medical student and the expectations for your notes and presentations are different than an intern**
    a. Don't say "vital signs are stable" -- say the vital signs
    b. Your A/P should be thoughtful, not just "chest pain, r/o MI"
    c. Do not cut and paste. Even if you see your intern do it. If you have to cut and paste, make it very clear. "HPI taken from Dr Smith's admission note, patient unable to give history due to dementia"

    d. You should do a full H&P on every patient, this will help you answer questions your resident/attending may have. However when you present, ask your resident if he/she wants to hear the full H&P or a more focused one.
    e. If you are on a consult team, ask resident/attending how they want your presentations to be. You can ask the fellow what types of data the attending will be interested in hearing (ie: on renal, I really don't care about the rectal exam but I do want to know if they recently had been taking NSAIDs).
12. **If you hear that a patient on your service/team/general vicinity has an interesting physical exam finding, go see it/listen to it yourself.** You are there to learn, and sometimes you have to be proactive. Always be polite, and ask the patient for permission first.
13. **Don't be annoying**. Yes, you are paying to be there, but the intern is trying to care for patients. Don't ask questions if they are putting in a line, doing a code, seeing a crashing patient. Just be helpful, pay attention, and debrief later.
14. **Don't lie!** If you forgot to check a finding or ask a question, say so -- don't base it off of the prior note. Then go and get the information.
15. **You aren't expected to know everything, it's ok to ask**
    a. "I had trouble hearing the murmur, can you show me where you listened?"
    b. "I heard a sound in the mid lung, would you call that a wheeze or a crackle?"
    c. "Can you go over this ECG with me? It looks like it's a regular rate and rhythm but I am having trouble understanding why the QRS looks like this."
16. **More things to not say (and suggestions on what to do instead)**
    a. "The lab was supposed to be done 6 hours ago but it looks like it wasn't." Say, "The lab was supposed to have been done 6 hours ago; I checked with the nurse and it's been drawn but the lab says they didn't receive it. I asked the nurse to redraw" (or draw yourself if you feel comfortable).
    b. "I'm not sure if the ECHO was done yet." Say, "The ECHO report isn't yet in the computer, but I spoke with the cardiologist and she said the patient had moderate AI."
    c. "I think the surgery was cancelled." Say, "They postponed her surgery until tomorrow because there was an urgent case. Can we restart her diet?"
17. **Even if the patient comes in with one complaint, there are likely to be other abnormalities. Make sure you identify and have an etiology and plan for abnormal physical findings, labs, etc -- pay attention to things like BP, glucose mgmt, anemia, elevated WBC. You will be helped by EPIC flagging things.**
18. **Ask for feedback**. People aren't great at giving feedback, so use specifics: "What could I have done to make my presentation better?" "Can I practice what I will say to the consultant with you?"
19. **There will be teams, residents, attendings where the fit isn't great**. Don't wait for the evaluation. Reach out to a mentor or clerkship director, and ask for assistance in navigating the conflict.

20. **If you are thinking you are interested in that specialty, let your team know!** People are more willing to teach and show you cool things (and give you the benefit of the doubt in grading) if they know they may be recruiting you into that field.
21. **Don't be upset if the attending elicits a different history than you did.** We all know that patients' stories sometimes change. Watch your attending ask questions -- sometimes it is all in the way it is asked. Your patient may swear up and down to you he doesn't take Advil or Aleve. Then the attending asks, "You told me you had arthritis. What do you take when it hurts you?" and the patient says, "Motrin." Part of why you are there is to learn the subtleties of history taking.
22. **Save all phone numbers in your phone** -- you never know if you will need to talk to the consultant, lab, or office again. This will save you inordinate amounts of time on hold with the operator later.
23. **Surgeons often ask Q in the OR. And they often ask the SAME questions in the OR**. Ask your resident what kinds of Q are likely to be asked, so you can have answers ready.
24. Ask if you can have **two minutes to teach the team** something (submitted by Dr Talia Swartz)
25. **A picture is worth a 1000 words.** Photograph rashes, wounds, infected areas. Ask first! Don't include any identifying information (ie: face, unique body markings or tattoos). Put in EPIC. This can be super helpful if you are calling a consult -- send the rash photo to derm, the ekg photo to cardiology. And don't post to social media.
26. **Save good teaching cases** - it may sound crazy, but you will soon be a resident. It's fantastic to have a bunch of cool ekgs, rashes, labs, zebra diagnoses at your fingertips so that you can teach the next generation of students.
27. **If you see a very unusual case, offer to write it up**. You can get a publication. If it's in a field you are interested in, you can even submit as an abstract to a national conference and make some connections there. Usually you write it up with the resident, fellow or attending. {*Quick note-- I never did this ever, but I see a lot of students do it -- I was always too busy/too tired to do this but I totally think it's a good idea*}
28. **Keep a list of all the things you need to do. Make check boxes.** When you've done the item, check it off. There are a few ways to keep this organized; you can put boxes next to the patient name so that each task is associated with its patient. You can also have a general list for general tasks. Finally you can organize it by time (9AM: Take off dressings; 10AM: Follow up Mr Smith's lab's), etc.
29. **Make all phone calls near a computer**. If you are on hold, you can get work done. If you are asked something about a patient, you can look them up. In fact, have the patient you are calling about's screen open on Epic, to save time.

(to be continued)

Surgery Clerkship Tips

*{**Written by Dr. Les James**, ISMMS Class of 2018, and exemplary surgery resident at NYU, who has also helped me out numerous times teaching Surgery}*

Questions? Interested in surgery? Giving away free tickets to "Harry Potter the Cursed Child"? les.james0209@gmail.com, 917.318.5636

1. A few days before your clerkship starts, figure out which team you will be on and who your chief resident/intern will be and introduce yourself.
Get the contact information for the chief resident/intern from your clerkship coordinator. Email the chief resident and intern (using their first names is fine) and ask where you can meet them for rounds on the first day. Give them your phone number and ask for theirs. Prepare for long days (surgery rounds start early!). Try to eat breakfast/drink coffee before you come, because operating on an empty stomach is...horrible. Keep snacks in your pocket (power bars, dried fruit) — lunch is never guaranteed.

2. Familiarize yourself with the workroom, supply room, and call room.
Before starting on the surgical clerkship, get a lay of the land (ask a senior medical student to help you if you're at a loss). It's helpful to go a day early and make sure you know where the team workroom is and the code to the supply closet. Find the scrub machines and the fastest way to the ORs (usually the stairs). Find pre-op holding (where patients go before surgery) and PACU (post-anesthesia care unit, where patients go after surgery). Know which floor is the surgical ICU.

- Patient List: At the start of the rotation, figure out how to get a patient list set up in Epic. Usually the intern or a previous medical student can show you how to do this. Don't ask people to show you how to do this on the first morning — mornings are notoriously busy and setting up a list can take time. This is a good question for the afternoon or downtime.
    - **Super Med Student Tip:** The day before the rotation starts, figure out how to set up a patient list/OR list; that way you can walk in on your first day ready to go. There is always someone hanging around the surgery call room; introduce yourself and ask them to help you set up a list.

3. Stock your pockets.
Morning rounds on surgery are a flurry of dressing changes. Often the chief resident will be talking to the patient while the intern/resident take down the dressings. Always put on gloves when you walk into a patient's room and be ready to help out. Even if other people are taking care of the dressings, be ready to take the soiled dressing and put in trash (dirty dressings on patient's bed = suboptimal)

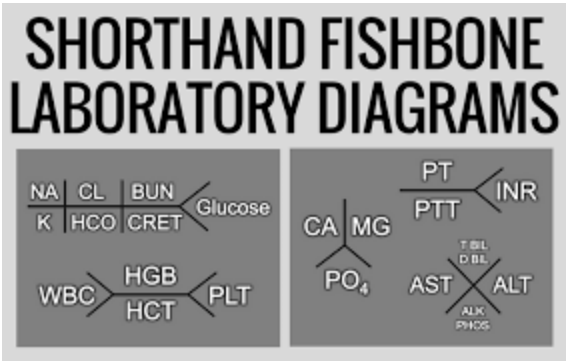
- 4x4 gauze (multiple)
- Paper tape (x2 rolls)
- Cotton swabs

- Suture removal kit
- Trauma shears/scissors
- Flushes (multiple)
- **Specific to vascular surgery:** Kerlix (large), ace wraps, silk tape, betadine, handheld Doppler

4. Rounds.

- Surgical "work" rounds are variable depending on:
    - (a) how many patients are on the list
    - (b) the start time for the OR (can change daily)
    - (c) whether there are teaching/didactics in the morning
- Just because you round at 6:00am one day does not mean that you will round at that time every day. Check with the intern at the end of each day for what time rounds will start the following morning. "Rounds start at 6:00am," means the team will start walking around at 6:00am. Work backwards from the start of rounds to give yourself enough time to chart check and examine the patients you're following. If surgery is your first rotation, give yourself 20 minutes per patient (10 minutes to look up information/talk to the nurse, 8 minutes to talk to the patient/examine them, 2 minutes to spare). **In surgery, early is on time, on time is late.**
- Pre-rounding: On a surgical service, you should plan to pre-round on every patient you operate on. You may be tasked with presenting only 1-2 patients (depending on how busy the service is), but it is generally frowned upon to operate on a patient and then not follow their course in the hospital. **The updates I get from medical students about certain patients can be super helpful in planning for discharge/follow-up!** Components of pre-rounding as listed below.
    - Find a free computer to look up your patient(s). Workroom computers should be reserved for interns/residents. If there are open computers, of course use them — but it can be frustrating if an intern arrives in the workroom and all the computers are taken. Always offer to give up your seat and use a computer at the nurses' station.
    - **Chart check:** overnight vitals (write down ranges and outliers), ins/outs (urine, stool, drains over the past 12h and 24h), any notes from overnight (e.g. patient went into urinary retention and got a bladder scan and foley placed), labs (trends for WBC and H/H especially important), imaging
    - **Intern/RN:** Speak w/ the overnight intern/PA/NP and the patient's nurse: any acute events over night?
    - **Examine the patient:** ask about pain control, whether or not they're passing gas or burping (for bowel function), if they have been out of bed and walking; if they have drains, make sure to check (serosanginous? bilious?); look at the surgical sites (do not take 'primary dressing' — dressing placed in OR — without talking to your team; if the dressing needs to be changed, change it)
    - **Presenting on rounds:**

    - Brief summary: "Mr. X is our 34 year old gentleman who is POD#2 s/p laparoscopic converted to open lysis of adhesions and small bowel resection.
    - Any acute events overnight? (e.g. patient vomited x2)
    - Vitals (give a range unless instructed otherwise), Ins/Outs
    - Focused physical exam findings
    - Pertinent labs/imaging (e.g. WBC 12 from 10 yesterday, electrolytes within normal limits except for K=3.6 and Mg=1.8)
    - Assessment/Plan: Overall impression of patient, next steps (try to have a plan — even if it's incorrect, it shows that you were thinking about the next steps)



- On rounds, you should be paying attention to the presentation and plan for every patient (not just the patients you presented). Take notes.
    - **Resident:** "Ms. Y is POD#3 s/p laparoscopic sigmoidectomy for diverticulitis. Her drain only put out 20 cc of serosanginous fluid over the past day, so we can remove it. She also seemed to tolerate clears overnight and is passing gas, so we can advance her diet. She needs to get out of bed and walk around, and we need to make sure she is using her incentive spirometer."
    - **Super Med Student Tip:** Write down the to do items (helpful to create check-boxes).
        - Take out drain
        - Walk with patient
        - Make sure patient tolerates advanced diet
        - Incentive spirometer teaching
    - At the end of rounds when the intern has a mile-long list of tasks, you can offer to do some of them (a better tactic than saying "What can I do to help?" is "I'm going to go walk Ms. Y and work w/ her on incentive spirometry; I'll get supplies for pulling her drain — when you have time, could you show me how to do it?") If there's something to be done that you haven't done before (e.g. pulling a drain), ask if you can go with the intern when they do it so you can learn how.
    - **Super Med Student Tip:** Find out how to get interpreters on the phone. If you know there is a patient on the list who needs an interpreter, use your cell phone

to get the interpreter set up before the team arrives at that patient's room. Super helpful, super appreciated!

5. Don't ask the intern/resident, "Is there anything else I can do?"

- "Is there anything else I can do?" is interpreted as, "Can I be dismissed/I'm not that interested" etc., (even if you don't mean it that way). Generally speaking, unless it's the end of the day/signout, there's always something to be done on the surgery floor (e.g. walking patients, rounding on post-ops, pulling drains, pre-writing discharge summaries, etc.) If you aren't busy on the floor, you are expected to be in the OR. Being proactive takes the responsibility off the intern/resident to assign you tasks and demonstrates that you have been paying attention. Personally, I notice the students who are offering to do things unprompted.
- If you have mandatory teaching or didactics, of course it's acceptable to tell your team that you have to be somewhere. It's helpful to give a heads up at the beginning of the day or the previous day (i.e. "I just wanted to let you know that I need to leave at 3:00pm tomorrow for our mandatory didactics.") Always plan to come back to the workroom after didactics to check in with the team. The interns/residents will appreciate the gesture. Always check on your patient(s) during the day and before you leave to go home.
- If there is downtime in the workroom, have a few pages printed out to read or review (or bring a small textbook, e.g. Pestana, Surgical Recall). Many people use their phones to study, but this can be interpreted as not paying attention/texting. Use your best judgement. Even if you're studying, keep your ears open for things that need to be done.
    - **Bonus:** If residents have down time and see you studying, they are usually more than willing to help you learn. Can't figure out how to differentiate cholecystitis vs. cholangitis? Downtime is the perfect time to ask. I have seen chief residents give impromptu "chalk talks" when medical students are hanging around the call room. These can be very helpful for shelf exams and OR questions.

OR Teaching: When I talk to medical students, it seems that OR teaching is the biggest source of anxiety during the surgical clerkship (e.g. being asked questions by the attending during an operation). Attendings ask questions because they are trying to teach; it is not meant to be punitive or scary. There are generally 3 types of questions attendings like to ask:

- **Question Type #1 — Basic information:** Who is the patient (pertinent history/physical/pre-op workup), what operation are they having and for what indication (e.g. laparoscopic cholecystectomy for biliary colic), what are the **basic** steps of the operation, and what are common postoperative complications/concerns. This is the information you should look-up the night before. Surgery: An Introductory Guide is an ***excellent*** MS3-appropriate overview of many common surgical operations written by Dr. Umut Sarpel (a surgical oncologist at Mount Sinai West!)
- **Question Type #2 — Anatomy:** Knowing the basic anatomy for surgical operations is very important. It can seem simple enough when you're looking at diagrams or illustrations, but recognizing structures intraoperatively can be difficult (especially during laparoscopy). This is where it comes in handy to know the basic steps of the operation (it

can provide clues to what you're seeing). If you don't know, that's okay! It takes time. Watching videos of common operations can be helpful. If you're really looking to stand out, try to find old op-notes by that surgeon (for this same operation) and read the steps they perform in common operations.

- **Question Type #3 — Read my mind/random trivia:** Some questions are used as jumping off points for discussion or simply because the surgeon wants to share some fun trivia. Surgeons tend to like history (especially as it relates to surgical history). Don't worry about getting these right. Random questions I have gotten in the OR during my residency:
    - Q: "Who is the Whipple operation named for? What was his middle name?"
        - A: Allen Oldfather Whipple, surgeon at Columbia who developed the pancreaticoduodenectomy for pancreatic cancer
    - Q: What is this structure right here? (::points to a blobby thing behind the stomach during a laparoscopic gastric sleeve::)
        - A: The pancreas
    - Q: "Who was the first Emperor of Russia?"
        - A: Peter the Great
        - NB: The colorectal surgeon who asked this is obsessed with historical battles
    - Q: "Who sings this song?"
        - A: Depends on who is singing, 80s/90s — correct 60% of the time, everything else is a wash

OR Rules

1. **Never be late to the OR.** The attending should always be the last person to come to the OR (intern/resident, medical student, and patient are all generally in the room before the attending gets there). This is sometimes not logistically possible, but make every effort. Before you scrub for any case, make sure you have introduced yourself to the attending.
2. **Always introduce yourself to everyone in the OR (circulator, scrub tech, anesthesia team).** "Hi, I'm Les — the medical student helping out today," and ask if you can grab your gown/gloves. Be extra nice to the circulator and the scrub tech and defer to them if they tell you where to stand, how to gown/glove, etc. If you're coming to a case late, walk in quietly and wait until there is a moment to introduce yourself/ask if you can scrub in.
3. **Situational awareness.** When you're first starting out, be mindful of when you ask questions/interject. There are parts of certain operations that can be very stressful (e.g. reperfusing a transplanted kidney, sewing an arterial anastomosis) and it needs to be quiet.
4. **Be mindful of space.** In certain cases, you won't be able to see every step. That's okay. Move your body accordingly and step back in when there's room.

5. **Anticipate.** The OR follows a pattern (actually, most of surgery follows a pattern). If someone is tying, quietly ask the scrub tech for scissors to cut. Pay attention to the flow of common operations. Help the intern/resident position the patient, place the foley, suture in the drain.
6. **Practice at home so you can shine when it counts.** At the beginning of the rotation, get some pointers on tying knots and suturing. There are many helpful YouTube videos on this. Carry silk ties around and practice tying (preferably w/ gloves on). When the attending or resident tells you to tie something in the OR, you're ready.
7. **Be helpful.** The case doesn't end until the patient is in the PACU. After the operation is over, make sure that the room is quiet while the patient is being extubated (intubation/extubation are critical portions of any operation). Resist the urge to check your phone! Get the bed, get warm blankets for the patient, debrief with the intern/resident. Grab a quick snack, rinse, repeat.

General Advice:

- Even if you're not planning on a career in surgery, take advantage of the clerkship — it will likely be your only chance to see the OR and get a feel for what surgical patients experience. Your future patients, your friends, and your family may all be future surgical patients — it's nice to be able to tell them what to expect. Similarly, many of the skills you learn in surgery are applicable to other specialties. ER physicians need to know how to close simple lacerations, Medicine interns need to manage NG tubes, Pediatricians need to be familiar with G-tubes, Psychiatrists consult surgery when patients with trichotillomania present w/ small bowel obstruction. Some of the best medical students I've worked with had no interest in surgery — but they threw themselves into the clerkship and tried to learn as much as possible about their patients and the OR. It is not necessary to lie about your career intentions in order to do well in the clerkship.
- Thinking about a career in surgery? Welcome to the dark side! Take advantage of the clerkship to learn more about the field and make connections. Try to scrub for every possible surgery you can.

Last words: Surgery has a reputation for being white (this too), male, straight, cis-gendered, and conservative. There are signs that this is changing (albeit ***very s-l-o-w-l-y***). This can be intimidating and nerve-wracking if you don't "fit" those very antiquated criteria. While I do not have an answer for this, I will say there are surgeons (especially at big academic medical centers in the northeast) who are invested in championing and promoting diversity in surgery. Regardless of whether or not you are exploring surgery as a possible career path, you have the right to a positive and productive surgical clerkship experience. If you find yourself working with an attending that makes you feel uncomfortable or unwelcome, find the intern, the chief resident, or the clerkship director and bring it to their attention (the sooner, the better). There are certain attendings who are not allowed to work with medical students because their behavior in the past has been inappropriate.

Resources:

- Surgery: An Introductory Guide — great overview of common operations written by Dr. Umut Sarpel (surgical oncologist and program director for the surgical residency program at Mount Sinai West)
- Essentials of General Surgery — dense book geared towards M3s/M4s, probably too much to read during the clerkship but great for looking up stuff (e.g. managing electrolyte abnormalities, wound infections)
- Surgery: A Case Based Clinical Review — high yield book w/ cases and many review questions (***highly*** recommend using for the shelf review)
- Surgical Recall — pearls for the OR
- Toronto Video Atlas of Surgery — nice videos!
- Surgical skills videos
    - Knot tying (knots I expect students to learn over the course of the clerkship: left/right two-handed, left/right one-handed; bonus for instrument tying)
    - Simple interrupted suturing
    - Drain stitches
    - Running subcuticular stitch
- Surgical Potpourri: Behind the Knife podcast, Legends of Surgery podcast, The Puzzle People, Better (and anything by Atul Gawande), The Woman in the Surgeon's Body, The Butchering Art