

The Calm Before The Storm: The 4th Year of Medical School prior to a Surgery Residency

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Being an intern is easy, if you know what you're doing.
—Bill Shea, MD (Vanderbilt Intern, 1979)

INTRODUCTION

Many medical students figure that their fourth year of medical school should be a time primarily focused on residency interviews and resting up for residency. While the interview part is necessary, the concept that one should be resting during that year is a myth. In fact, nothing could be further from the truth. Your top priority should be to prepare yourself to hit the ground running as a great surgical intern.

It's supposed to be hard. If it wasn't hard, everyone would do it. The hard is what makes it great. —A League of Their Own [Gilbert, 1992]

So, what are the principles and strategies that will prepare you to be a great surgical intern? There are two over-arching priorities to consider:

- Make your fourth year be as much like an internship as you can
- Learn as much as possible in your fourth year about what might kill the patients you will care for during your internship [London, 2008]

Here is some additional advice about accomplishing those priorities:

- Do no more than one externship on a surgical service
- Spend the rest of your time learning as much about the medical problems of surgical patients as you can
- Fill in the gaps in your knowledge and experience that will help you care for your patients during your internship

Now for some more granular advice.....

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CARING FOR KIDS AND PATIENTS WITH NEUROLOGICAL ISSUES

Most doctors are afraid of caring for children and for patients with neurological issues. —An Old Aphorism

The only doctors who will not need to care for children in their training are Internal Medicine residents (though they're fairly likely to have their own children, of course). And, virtually every doctor will encounter neurological issues, regardless of their specialty. So, how can you, as a future surgeon, become comfortable with these two issues? One good approach for a future surgeon is to sign up for rotations on pediatric surgery and on neurosurgery. You will still be learning surgical principles on these rotations, but you will also become more comfortable taking care of kids and of patients with neurological issues. However, a solid externship in pediatrics, especially in an inner city hospital (if such a rotation is available to you), will also provide you with excellent experience in taking care of sick children.

DEALING WITH THE MEDICAL PROBLEMS OF THE SURGICAL PATIENT

Whatever else a surgeon is, he is an internist and something more, not something less. —Francis Moore, MD

To paraphrase Dr. Moore, a surgeon is a doctor who knows how to operate. You must understand the medical problems of the surgical patient. Therefore, for most of your fourth year, try to sign up for rotations that will familiarize you with the medical problems you will see in your future surgical patients. Specifically, you should sign up for an inpatient internal medicine rotation, as well as rotations that include pulmonary medicine, cardiology, nephrology, and infectious disease. It is entirely reasonable to learn about these specialty issues on consult services, rather than focusing entirely on inpatient rotations. It is worth noting that the clinical maturity you will bring as a fourth year student will not only make your participation on these rotations more valuable but will also allow you to learn from them in a more discerning way.

OBTAINING CRUCIAL SKILLS

Risk comes from not knowing what you're doing. —Warren Buffett

Rotations to consider

There are additional skills that a future surgeon should acquire, if possible, including learning to read images (in a radiology rotation), learning about airway management (in an anesthesiology rotation), learning about wound management (in a plastic surgery rotation), and learning to make diagnoses on patients who are not already ‘in the system’ (in an Emergency Medicine rotation). Another rotation to consider is Surgical Pathology where you will learn about frozen section interpretation and may have the opportunity to participate in autopsies.

Skills courses to consider

Most schools now offer some version of ‘intern boot camps’ or ‘intern readiness’ courses. You should take advantage of those courses, if they are available, of course. Furthermore, if your school does not have such a course, you might consider helping start one. Most fourth year students will also want to become ACLS (Advance Cardiac Life Support) certified if they are not already. In fact, being ACLS certified is a requirement for starting to work as a house officer in many institutions. It might even be possible to participate in an ATLS (Advance Trauma Life Support) course, at some institutions.

Learn the skill of writing progress notes.

There is something mystical about the thinking/writing nexus, the direct connection, the crackling intellectual current that flows, unimpeded, from brain to paper. —Daniel Waters, DO

You need to learn how to write good progress notes. You need to focus on efficiency, clarity, and organization, while avoiding massive data dumps. Keeping a list of each patient’s problems will guide your notes, your presentations, your hand offs, and, especially your own thinking. It’s often been stated that you can’t think clearly if you can’t write clearly.

There are two kinds of residents: those who write things down and those who forget. —Hermes Grillo, MD

To be a bit more specific, it is helpful to those who will read your progress notes if you will put in clear terms exactly what your team is thinking about each patient each day. A patient is either on a trajectory towards improvement or is not, and this sense of progress, or lack thereof, should be indicated. [Tribble: Are You Making Yourself Clear?]

OTHER CONSIDERATIONS FOR PLANNING YOUR FOURTH YEAR

*To achieve great things, two things are needed:
A plan and not quite enough time.* —Leonard Bernstein

The M4 Year is not a gap year (at least not too much of one).

One should avoid taking time off from good, solid educational rotations, especially if you think your objectives in doing so are to have fun, travel, or rest. You will have time for all of those things at some point, but your 4th year is a

precious, non-renewable opportunity. AND, you are paying tuition for that opportunity, so get the most for your money! We have known students to spend time in their 4th years doing ski patrol (which is likely not all that educational) or spending time in a student health clinic (with the false belief that they are going to obtain valuable experience doing physical exams on healthy people). You should save your time for vacation to the time after The Match in the Spring. Or, better still, save vacation until after graduation. One week should afford plenty of time for rest.

Fill in the holes in your education.

In planning your senior year, take into consideration what you have already done in your third year (or prior to that, for some). It makes little sense to repeat a rotation you have already done, at least in most cases. Use this precious time to supplement what you have already learned and experienced in prior years.

A good rotation to consider that covers a lot of ‘waterfront’ is a critical care rotation. Again, it makes some sense to consider doing such a rotation in a realm a bit different from the discipline you intend to enter for your training. For instance, you might choose a neurosurgical ICU rotation over a surgical ICU, if you are planning to enter a Surgery residency. Or vice versa. And, a medical ICU may provide even more learning opportunities that you will not experience later on.

Regardless of the rotations you end up with, it is always a good idea to have a small notebook with you at all times (such as a Moleskine or a Field Notes notebook) to take notes and to add reminders to look something up later.

Seek out the best teachers and mentors at your institution.

There are additional subtleties to consider in creating a really educational M4 year. One of these is to find the best mentors and teachers in your institution, in any discipline, and try to figure out how you might spend time with them. These folks are generally well known by the housestaff, older medical students, and faculty. What you will likely get from these types of mentors is not, necessarily, knowledge. Rather, it is wisdom, which is quite a bit different.

Audition electives often aren’t all they’re cracked up to be.

One should avoid doing ‘audition electives,’ at least most of the time, especially those at institutions other than your own. There are a variety of reasons for this advice, including the facts that:

- They are expensive
- They’re not likely to help you change your competitiveness as a candidate. (This issue has been studied over the years)
- There are exceptions to this advice, of course, such as the situation of not having exposure to a discipline in which you are interested at your home institution.

However, it does seem reasonable to consider an ‘away’ rotation at an institution in which you are particularly interested for an array of reasons (for example, if you are couples matching and both partners want to be in a certain institution or location).

Managing your schedule during interview season.

Try to avoid taking off big blocks of time for interviews, if possible. Alternatively, consider signing up for rotations, during interview season, that you can ‘come and go’ from without disruption, such as rotations in the ER, in an ICU, on anesthesia, or on a consult service. Above all, try to sign up for some educational experience for each and every month of your 4th year of medical school.

TAKING CHARGE OF THE REST OF YOUR EDUCATION

What should be on your M4 bookshelf?

Don't give up on books. They feel so good.... A large part of our brains is devoted to deciding whether what our hands are touching is good or bad for us. Any brain worth a nickel knows books are good for us. —Kurt Vonnegut, 1999

For each rotation you take on, you should find something succinct to read during that rotation. There is often a ‘just right book’ that will fit the bill. And, at this stage of your education, books are generally better than articles. After all, books are, at least mostly, written by experts who know what the standard of care is thought to be for a given issue, while articles, new ones anyway, are often on ‘the lunatic fringe,’ given that it is hard to get an article published if it is not ‘breaking new ground’ (with the exception of review articles, of course).

While you can search for this type of reading material yourself, it is always a good idea to ask your residents and faculty for their recommendations. And, commit to reading these treatises, in their entirety if possible, while on the relevant rotations, if not before. Furthermore, take notes on what you are seeing during your rotations, by hand if possible (writing involves the use of three parts of your brain, according to functional MRI studies, while typing requires the use of only one part of your brain). [Tribble, Merrill: In Your Own Words]

If you don't know anything, it's hard to learn anything else. —E.D. Hirsch

To take a slightly longer view of your reading plans as an M4, you should:

- Read a textbook in your discipline, usually the most succinct one you can find (such as *Essentials of Surgery* by Peter Lawrence et al) in your M4 year, prior to starting your internship. [Tribble: Preparing for the Lurch into a Surgical Internship]
- Subscribe to two types of major journals:
 - a medical journal like *NEJM* or *JAMA* & read through each issue (There is virtually always something of interest to surgeons....)
 - a surgical journal like *JACS* and read it each month or, at the very least, get the Table of Contents of select journals emailed to you and glance at them regularly. (You will likely have access to the actual articles through your institution's library.)

- Consider what other books should be ‘on your bookshelf,’ including at least some of these classics:
 - *The Early Diagnosis of the Acute Abdomen* by Silen.
 - *Techniques in the Use of Surgical Tools* by Anderson & Romfh
 - *Essentials of Surgery* by Peter Lawrence et al
 - *The House Officer's Guide to ICU Care* by Elefteriades et al (Disclaimer: one of us is a co-author of this book.)
 - *A Little Book of Doctor Rules* by Meador
 - *Top Knife* by Hirshberg & Maddox
 - *A Way of Life* by Sir William Osler
 - *Surgical Ethics* by McCullough, Jones, & Brody
 - *Fluids & Electrolytes in the Surgical Patient* by Pestana
 - *Surgical Recall & Advanced Surgical Recall* by Blackburne et al
 - Any of the other 30+ Recall books
 - *Many Sleepless Nights* by Gutkind
 - *Learning Clinical Reasoning* by Kassirer et al
 - *Fundamentals of Radiology* by Squire
 - *Rapid Interpretation of EKG* by Dubin

And, by the way, it will be very much worth your time to actually read at least portions of these books!

Consider Other, Unusual, Educational Programs

Tell 'em what you're gonna tell 'em. Then, tell 'em. And, then, tell 'em what you told 'em. —Dr. J.B. Green, Professor of Homilies (AKA: Sermons), Columbia Theological Seminary

An unusual, but potentially valuable educational option that is rarely considered is to take a review course in your future discipline. These courses are organized primarily for residents who have finished their training and who are preparing for their board exams. However, they are usually very well organized, taught by experienced educators, supply useful materials for review, occur over a fairly short time, and cover the entire discipline. The value of getting an overview of your future discipline is that you will have a better sense of where everything you encounter as you move forward in your chosen realm ‘fits into the grand scheme of things.’

An analogous educational ‘undertaking’ is to get your hands on a recent version of SESAP (Self-Education and Self-Assessment Program) which is created, and updated regularly, by The American College of Surgeons. The crown jewel of this program is the Audio Companion to SESAP. You can install this audio content on a digital device (an iPod or, perhaps, an iPhone) and listen to it while driving or working out. These programs are outstanding in scope, depth, and, believe it or not, entertainment value. These programs are not cheap. However, you can keep and use them for years to come.

OTHER CONSIDERATIONS FOR PLANNING YOUR M4 YEAR

What about research during the M4 year?

Do not take much, if any, time off for research. Here's why:

- You won't get much of significance accomplished

- You can learn to do research later, if you are interested
- It takes too much time away from your core mission (Which, again, is to become a good all-round doctor.)

However, you certainly can help a mentor with a case report or a literature review on a topic of interest. This sort of undertaking is not overly time consuming, is always educational, and may provide an early entry for your resume.

To Teach is to Learn Twice

Most of you are preparing to enter fields unattractive to greedy persons, such as education and the healing arts. Teaching, may I say, is the noblest profession of all in a democracy. —Kurt Vonnegut

Try to at least begin to become a teacher as a senior student. When you are doing clinical externships, there will usually be younger medical students on those services. You may be surprised by how much more you know than those younger students. And, I assure you, you will be amazed to recognize the validity of the old adage that ‘to teach is to learn twice.’ Furthermore, since you will be expected to be a teacher and role model as a resident, you can begin to hone these skills as a senior medical student.

After all, it has been said that we learn...

10% of what we read.

20% of what we hear.

30% of what we see.

50% of what we see and hear.

70% of what we discuss with others.

80% of what we experience.

95% of what we teach to someone else.

With efficiencies like that who wouldn't want to teach? [Tribble, Merrill. *The Way We Talk is the Way We Teach*, 2014]

Giving Back to Your Community

Some will find themselves drawn to being of service, perhaps a bit outside of the ‘official’ educational environment. A good option to consider may be your local Free Clinic. Often your commitment to such an effort can be quite flexible. And, of course, any clinical exposure you have will be educational in one way or another.

Maintain Your Own Health

While keeping all of these priorities in mind, you should also focus on your own mental and physical health. Get in shape or, as will be true for some, get back in shape. Consider taking up activities that you will not only be able to do as a busy houseofficer in the future but consider also taking up activities that you can do for the rest of your life. For many, running or hiking will be attractive options. You can consider taking up swimming for exercise, even if that has not been part of your repertoire up to this point in your life. Consider trying out some yoga classes. You may be surprised at how much of a real workout that yoga can be. And, it can be done

anywhere you can plop down a yoga mat, even in a hospital call room!

After all, besides maintaining your own health and fitness, you should try to be a good example for your patients, your eventual protégés, and your families. [Tribble, *Always Keep Your Clothes in the Car*] Another consideration in this realm might be to take up an activity that you can do for most of the rest of your life, such as tennis or golf. One way to go about adding such an activity to your repertoire is to sign up to take lessons from a good teacher of that sport or activity.

THE ACTUAL APPLICATION PROCESS

The application process is daunting, and it is complex enough that doing it justice will require a separate, future treatise. However, it is worth noting that the goal of your application, when the time comes to work on it, is to convince the programs to which you apply that they would love to have you as a resident. If you would like to begin to prepare for the application process, you could start by thinking about why you want to be a surgeon and why you believe that your background, skills, and aptitude will allow you to fulfill your dream. We have written about how to examine those beliefs in the past. [Tribble, *The Mental Strategies of Surgeons, Parts I & II*]

A particularly challenging part of this process is requesting letters of recommendation. We suggest that, when requesting a letter from someone, you offer to have residents send emails of support to the potential author of such a letter. This approach gives the writers some granular information and can reinforce their impression of your candidacy for the training program in which you are interested.

CONCLUSION

It is as if the wind were trying to warn me that I am to undergo an ordeal, that my voyage will won't be an idyll. But I have, I hope, no illusions. I expect an ordeal, an ordeal of grandeur. – Webb Chiles in *Storm Passage*, 1974

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