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Every future physician begins their journey through medical school and residency with a strong desire to make a difference in the lives of others through medicine and a rigorous preparation process.

For the most driven applicants -the precocious premed- this process begins early with a concrete strategy for success. This guide is that strategy an interactive manuscript you can use to convert your desire into acceptance.

Chapter 1: Discovering your passion

The very first step towards success in any occupation is to become interested in it.
-William Osler

Along the way to a career in medicine someone is going to ask you, "Why do you want to be a physician?" So ask yourself:

a. What excites you about a career in medicine?
b. What experiences have you had that drive, illustrate or capture this passion?
c. Why medicine? Why not nursing, public health, research, law or any other field?

Write down your answers somewhere safe, you'll come back to them often as you prepare for your application

Chances are you've been a patient, maybe you know a few physicians or really love science. So, all set, right? Probably not.

Discovering your passion for a career in medicine rarely begins or ends with "Aha!" moments. Like many other things in your preparation process, it is a process of discovery. The core component of this discovery process is putting yourself into healthcare situations where you can support patient care.

Write down the names, location, phone number, website, and email address for 10 physical spaces in your school, community or hometown where physicians provide patient care. Alongside each of these, write a small summary of the care environments or patient contacts each provide. For a nursing home this might be something like "Occasional check-ups by physicians in patient rooms and health education classes", for a free clinic "Basic outpatient care managed by medical students but supported by an attending physician" etc.

Now that you have an idea of where care is provided, its time to gain some experience with patient care. There are a few important characteristics that define useful clinical encounters:

a. You get to talk with patients.
b. You get to talk with physicians
c. You are in a clinical setting
d. You can ask questions about the care process

Unfortunately, many care settings significantly limit the ability of non-medically qualified staff to engage in these activities so choosing or creating the right opportunity is a critical component of gaining a useful experience. Fortunately, there are several strategies you can still use to land the experience you need:

Strategy 1: Friends and family. *If you know any physicians, talk with them first. They've all been through the application process and know the importance of a great clinical experience. See if any have time to let you shadow them a few times.*

Strategy 2: Contact your school's premed office or an external premed advisor. *Often premed offices have ideas on how to gain clinical experiences and also know what previous successful applicants have done at your school, local hospital, or in your community to gain clinical experience. In addition to gaining some new ideas, letting them know early that you're thinking about applying to medical school is always a good idea.*

Strategy 3: Cold calls. *Ok, so don't literally call, send some tailored emails to faculty or departments where you might be able to gain some experience. Spend some time reviewing the websites of places you might want to work and then send a measured yet enthusiastic email noting your interest in volunteering with them, why they're a good fit, and how you think you might be able to support their work. A Nobel Prize winner is probably not going to respond to your email, don't take it personally, they might not be responding to their grad students (or Dean for that matter) either. You're going to get a 1 in 20 response rate at best, but don't worry all you need is 1.*

Strategy 4: Get a job. *If you work or volunteer in a clinical setting, even doing something unrelated, you'll be able to meet people providing care and, with some tact, convince them to let you tag along. Don't underestimate the power of this strategy.*

Whichever strategies you employ, be gracious, professional, and prompt in all of your interactions.

SUCCESS. You've got your opportunity to shadow, now its time to prepare for the first day.

On the first day:

a. **Show up early to the right place**. Do some research ahead of time and find out how to get there.
b. **Look like a professional**. Dressing up is important, just do it. Find out what staff wear and dress like them (do not: wear a white coat or scrubs unless explicitly instructed).
c. **Stay involved but stay out of the way**. Not surprisingly, whoever you're working with is probably very busy so find out, ahead of time if you can, what you can do to help them out without slowing them down (too much).
d. **Ask the right questions at the right time**. You are not shadowing to learn medicine you are shadowing to learn about medicine. Find opportune times to ask about the dynamics of patient care or management, you'll learn the technicalities of treatments or procedures later.

After your first shadowing opportunity (or maybe even your first few) write a nice yet short email or note thanking them for the opportunity, mentioning something specific you learned, and, if you want to continue working with them, make a request for a reasonable amount of continued contact time.

Having had your clinical encounter, come back to your list:

a. What were some important interactions with patients? With physicians?
b. What characteristics or traits were interesting or exciting about these interactions?
c. What were some things that were unexpected? Disappointing or difficult?

Answer these questions and repeat this process a few times during your shadowing experience. You'll use these help you decide about medicine now and later to compose your personal statement.

Time to come back to our original questions:

a. What excites you about a career in medicine?
b. What experiences have you had that drive, illustrate or capture this passion?
c. Why medicine and why not nursing, public health, research, law or any other field?

With some fresh evidence to begin to answers to these questions, you're ready to start deciding. Unlike decisions to enroll in classes, invite someone on a date, or purchase a computer, deciding on a career in medicine is an iterative and personal journey of variable duration. Lots of people will have "advice" for you but those people aren't going to do the work or make the sacrifices, you will so be publicly gracious and internally critical.

If you choose to go into a career in medicine you will have the opportunity for tremendous benefits including:

a. A career that makes a genuine difference in the lives of others.
b. Nearly universal respect.
c. A very, very good salary in a profession with nearly non-existent unemployment.
d. Life-long learning in an environment that values curiosity and discovery.

These are all tremendous benefits BUT they come with real trade-offs:

a. Forgoing much of your ability to choose where you live and what you do for about a decade of your life. While good applicants get some choice in deciding on where to go to medical school or complete residency, all medical students and residents will work 60+ hours per week during their training (and often beyond training).
b. Missing important family moments. Even preparing for a career in medicine means you often have to dedicate your nights, weekends, and holidays to the service of others. There will be a limit to how much your family, friends, partner, or child(ren) will understand this sacrifice.
c. Forgoing other opportunities. If Bill Gates had gone to medical school, we might have a cure for arthritis but no laptops. Some of the people who've made the most difference in our world (including the largest impacts on improving health) did not go to medical school.

Ultimately, making a decision about medical school involves having as realistic as possible an understanding of what the career is like and whether it is what you want to do with your life (at least for the next 10 years or so). As you make your preliminary decisions, remember they are not permanent, you'll feel ups and downs along the way, you can change your mind, and above all, the only right decision is the one you make for yourself.

Chapter 2: Preparing for success in the application process

The precocious premed knows that preparing for medical school is about developing and displaying her or his passion for a career in medicine. This entails becoming involved in activities that make a difference in the lives of others and that have relevance for medicine. These activities fall into three broad categories; academics, research, and service.

A note from the author: This is a guide about **getting accepted to medical school.** Many of the things recommended in this guide have inherent value to you and to others outside of their value to your application success. Ultimately, if you don't like to learn, you don't like to serve others, and you don't like to solve problems, you probably won't enjoy medicine very much.

A. Academics

Education is the most powerful weapon which you can use to change the world.
-Nelson Mandela

One thing that is guaranteed during your time as a premed is that you will have to memorize several physics equations named after dead European scientists.

The premed curriculum is packed with requirements in order to give you a basis in the sciences that form the basis of medicine. These requirements also challenge your ability to learn, understand, and apply science. The former may fade over time; the latter will be developed over the course of your education, training, and practice. Your grades and later your MCAT scores show how well you've managed this process.

You will often be told to "study hard" in order to achieve success. Again, be outwardly gracious but inwardly critical. Study hard is pretty ambiguous advice, does that actually mean you'll get good grades? Not necessarily.

Effort is important but you also need to know where to exert your effort in order to achieve success. The following are important steps for achieving success in any class:

a. **Find out, as early as possible, what you need to do in order to achieve success.** Maybe its tests, essays, or lab, in any case, get a clear sense as to what you'll be evaluated on.
b. **Focus on the things you need to know**. Focus on the core aspects and learn those- then the auxiliary material.
c. **Dedicate time to studying.** Lock yourself away in a library, basement, or cave, wherever it is, give yourself time and space to learn the material.
d. **Get a system for memorizing.** Flashcards, songs, mnemonics, whatever it is, learn how you memorize best and do that.
e. **Practice being evaluated**. Learning the material is only part of the challenge, evaluations will often ask you to apply that material in new or unexpected ways often in high-stress situations.
f. **Get help when you need it**. Go to office hours, TAs, friends, whoever knows the material you don't. Learn it. Everyone has to learn the basics at some time, you have nothing to lose but a better grade.

If you combine these strategies with a proportionate amount of effort, chances are you'll be hearing "congratulations!" a lot more than "study hard!" next winter break. Coincidentally, these same principles will help you save lives later so take them to heart.

B. Research

….science is at the base of all the progress that lightens the burden of life and lessens its suffering.

-Marie Curie

Research is the only reason we are not still bleeding our patients to balance their humors (although, in all fairness, leeches are making a comeback). Research is a systematic process of discovery which, when reviewed and approved by independent experts, becomes the basis for medical science.

The idea of research can be daunting, the process can be long, the science inherently complicated, and the expectations high but, the more you see of how research is ultimately used, the more likely you'll understand its value. As a physician, most care settings will expect you to do some research. As a medical student, you'll be encouraged to do research. As an undergrad, someone will probably suggest getting involved as well. It is best to get a head start now. Even if you don't ultimately become a researcher, you'll use research results every day. In summary research is important to you because:

a. **Research is the underlying basis for medicine**. Knowing the process will help you understand how to interpret it.
b. **Discovery saves lives.** Even if the application isn't wholly obvious yet, discovery helps people live longer, happier lives.
c. **You can contribute to saving lives now.** Marie Curie won the Nobel Prize in Physics at age 36, just months after being awarded her doctorate. She didn't wait, neither should you!
d. **Medical schools care about it (and you want to get in).**

Whether eradicating disease, developing new surgical techniques, elucidating the structure of a virus, improving health system management, or creating a new device, most of our greatest scientific breakthroughs weren't accidents, they were the result of concerted, systematic efforts to investigate how things work.

Most research groups are led by a Principal Investigator (PI), a senior faculty member who is an expert in a given field. They may have a PhD or an MD, sometimes both and have published a lot of literature in that field. Their main job is to set the agenda for the research group, make sure projects are moving forward, troubleshoot major problems, and get money through grants or otherwise to keep the research group going. Depending on the size of the lab, other faculty members may also work for them. Next are the post-docs, typically PhDs who've recently finished their degree and are growing their credentials. They might not be ready to lead a lab themselves but they are already experts in the field. Next are graduate students who may be working there for a few years if they're completing their PhD or short term, say a summer, if they're MD candidates.

They'll have more general knowledge on the topic and get most of the work done day to day for the research team but are ultimately there mostly to learn new techniques and build their understanding of science. Depending on the research group, there may also be technicians or others tasked with doing things like transporting materials, prepping lab animals, or enrolling participants.

The only thing missing from this is you, so how do you fit in? Well this depends on a few factors:

a. **What the lab does.** Research happens in a lot of different ways, its not just pipettes and test tubes, it could be modeling, measuring, surveying, analyzing, biopsying, scoping, and lots more.
b. **The size of the research group**. Larger labs have more layers and likely more defined roles. They may already have a few set roles for new lab members.
c. **Your level of experience**. If you have past research experience or other relevant experience, you'll be able to jump into more complex roles.

No matter the research area, size of the team, or your level of experience, the basic strategies for starting with a new research group are essentially the same:

Strategy 1: Friends and family. Again, if you already know people doing research in a remotely interesting field, try working with them first. Same principles apply here.

Strategy 2: Email professors. This is the most common way of getting into a research group. First, draft a generic email. Include relevant but concise details about yourself, phase of education, interests long-term, and when you're available to start. Close your email with an offer to meet with them or another member of the team to find out more about the research and any areas where you could contribute to their important work. Next, find a relevant lab and tailor your email to be relevant to their work and mention a few areas of their current work you'd like to be involved in. Third, send. If your email is more than 150 words, make it less than 150 words. Again, expect a response rate of about 1 in 20.

Strategy 3: Apply to research programs. If you don't have past experience, this is more of a long shot but if you do, can be a great way to gain experience.

Strategy 4: Get a job (you can see where this is going). Again, even if you're not doing something that's directly contributing to the progress of the research, you can often manage to develop a role that's contributing more directly simply by being around the research team, learning what they're doing, and then offering to help out in very specific ways. Chances are, they'll say yes.

Write down the research area, Principal Investigator name, ongoing project, names of 2-3 publications, and email address for 20 potential research teams you'd like to join.

Depending on your schedule, working during the school year or over the summer, maybe both might make the most sense. The more longitudinal your involvement the better. However, this shouldn't discourage you from participating in summer programs, especially when they're full-time, they can also give you a rich, focused experience. In either case, as a member of the research team, you should have a few goals:

a. Learn how to ask a good research question.
b. Learn a few research and analysis techniques from that field.
c. Assist with running at least one experiment or data collection method.
d. Develop a relationship with the Principal Investigator or someone at a high level in the lab who can know and evaluate your work.
e. Present the results of your work or on a specific topic at a lab meeting or to your supervisor.
f. Optional: present at an academic conference, publish your work, write a grant application, etc

Whatever type of research you embark on, make sure you're enthusiastic, ready to learn, and have a clear sense as to what's expected of you. Not all research leads to publications, conferences, and presentations let alone big discoveries but every research experience should help you better understand a specific field of study, help you meet some people who will support your career goals, and leave you with a deepened understanding of how science is made. Whether you're a full time scientist later or just looking through papers to find a treatment for a patient, the more experience you have with research, the better you'll be at medicine (and the process of applying to medical school).

C. Service

The best way to find yourself is to lose yourself in the service of others.
- Mahatma Gandhi

As a physician, you will have enormous responsibilities and be expected to work incredibly hard. For much of this, you will be handsomely rewarded: prestige, money, opportunity, and trust. You will also do many things for which you will never be thanked. Serving others does not end with acceptance to medical school, if anything, it is the defining characteristic of medical education and practice.

Giving to others without expecting anything in return is arguably one of the things that most defines us as humans.

At a minimum, it's a way we can use our time, skills, resources, and energy to help others. As a physician, the capacities in which you will serve others will change dramatically. You may certainly find yourself volunteering at a soup kitchen, coaching a sports team, or helping disabled patients move around the hospital. These activities have value, make a difference in the lives of others, and make our world better however, as your career progresses, the majority of the activities you do to serve others will be complex, difficult, and, more often than not, inherently novel. Whether alone or with a team, you will almost always be expected to lead, organize, and, above all, make a difference.

High-impact service starts with a few key questions:

a. What are some important needs in my community?
b. What are considered the best ways available for addressing those needs?
c. What is already being done to address those needs?
d. What additional actions might make a difference?

Select 5 areas and answer each of the questions for each area. If you can't find complete answers, visit a volunteer resource center at your school or in your community.

Finding meaningful ways to make a difference is actually remarkably challenging; if it were obvious and easy, in all likelihood someone would already be doing it for themselves or for others. Just as in medicine, getting good at service means building connections with people and communities in need, discovering what you can do to help, developing those skills, and forging productive partnerships that lead to real results.

Every service activity should start and end with making a difference in the lives of those you serve in tangible ways. Not everything you do will lead to tangible results but your efforts, likely after an iterative cycle of learning, trying, failing, and learning, trying again etc. should eventually lead to changes that can be described or measured. You'll also grow personally through this process, you should also keep track of that growth. Once you've found a way to help, get started. Many of the strategies are similar as those for landing a great clinical or research position so adapt and adopt as needed.

Above all, make time to listen to those you serve. Just as in medicine, you may gain the most valuable insights at the most unexpected times.

As a doctor, when I was minister of health and would go somewhere, little girls would come up to me and say, 'I want to be like you one day, I want to be a doctor.' Now, they tell me, 'I want to be president just like you.' All of us can dream as big as we want.
-Michelle Bachelet

Chances are, you've already met a few precocious premeds. They're superstars across the board, great understanding of medicine, interesting research, great grades, and serving in ways that matter. Many of them are referred to as geniuses, they get reputations for never sleeping or having a photographic memory or amazing social skills. Whatever it is, they obviously have "it".

As you may have noticed while reading this guide, that "it" is actually just the result of a well planned and **well executed application strategy**. The precocious premed learns what they need to do and reaches for his or her goals.

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