• • Introduction • •

The transition from the basic sciences to the clinics is naturally intimidating. You’ll soon be immersed in an unfamiliar environment that will demand greater responsibility and commitment than anything you’ve previously encountered in medical school. But working clinically with patients is (hopefully) what you went to med school for in the first place! Despite how awkward your white coat may feel, you are more than ready to begin navigating the corridors of HUP.

While your clerkship year will occasionally be anxiety-provoking and exhausting, it will more often be exhilarating, exciting, and fun. You’ll see the practical application of the things you’ve learned, interact daily and influentially with patients, become a valuable member of medical and surgical teams, and finally sense yourself becoming a true clinician.

This guide is intended to help ease your transition into the clinics. You’ll soon realize that each rotation and each site has its own distinct flavor. What is expected of you as a student will vary from one rotation to the next and from team to team. Rather than attempt to describe every detail of each rotation, this Survival Guide presents general objectives, opportunities, and responsibilities, as well as some helpful advice from previous students. Above all, your fellow classmates and upperclassmen will be a tremendous resource throughout this core clinical year.

Enthusiasm, dedication, and flexibility are the keys to performing well and learning in the clinics. Throughout your clinical experience, you’ll interact with an incredibly diverse group of attendings, residents, and students in a variety of medical environments. If you can adjust to these different situations and maintain your enthusiasm, curiosity, and integrity throughout, you will not only be a successful clerkship student, but you’ll also have a fun and fulfilling year.
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Acknowledgements

This guide has been revised throughout the years and could not exist in its present form without the efforts of previous writers and editors, as well as the experience and advice of previous students. Special thanks goes to the Office of Student Affairs for helping to provide this information to students so that they may feel better prepared as they enter the clinics. We hope you find this guide helpful during your transition into the clinics. Again, you are not expected to know everything, only to learn a little more each day. Trust that your comfort, confidence, and abilities will increase with experience. Maintain your enthusiasm and curiosity. And above all, don’t forget to relax and have fun.

Best of luck,
AOA and GHHS Class of 2016
Helpful Hints

- Having a good attitude and being a team player is as important as a strong fund of knowledge. Often it is more important.
- Get organized. Stay organized. Ask your interns, residents, upperclassmen, and classmates for ideas on how they organize their patient information.
- Don’t be afraid to ask for help. Don’t be afraid to ask questions. (However, better questions are ones that you couldn’t easily look up on your own.)
- Always brainstorm your own assessment and plan before asking your residents for theirs. You don’t have to be right, but thinking through your patients on your own first is definitely looked highly upon.
- Be friendly to nurses, clerks, and other staff—they can teach you a great deal about your patients and about how things are done in the hospital.
- Take some time to learn your way around the different parts of the patient chart (both electronic and paper) early on. Do the same with the multiple computer systems. You can be a big asset to your team if you can perform an efficient “chart biopsy”.
- Always be prepared and on time for rounds.
- Anticipate attendings’ and residents’ questions about abnormal lab values or other findings for your patients, and think about some possible explanations. You don’t need to be right, but you need to show you noticed and are thinking.
- Respect your residents and attendings, but do not kiss up. Insincerity is obvious.
- Learn the many ways to say sincerely “I don’t know”—tough questions often aren’t intended to evaluate you, but often to provide a starting point for teaching. Think of pimping as an attending’s way of showing love.
- Don’t be afraid to be wrong, either – people are usually interested in your being able to think a problem through rather than just on whether you’ve memorized an answer.
- Ask for feedback at the end of every week from both attendings and residents to help you redirect your efforts if necessary and avoid surprises at the end of the rotation.
- Do not despair if you receive an unfair evaluation. Almost everyone gets at least one unexpected grade in the course of their clinical rotations.
- Do not show up or undermine a classmate or resident, intentionally or accidentally.
- Learn your place on the team – you can contribute positively to patient care, but medicine is a team-based sport, and it is best to learn this early and quickly.
- Don’t spend too much time on MedLine/OVID/Pubmed searching for the most recent articles. Concentrate on the basics. But, bringing in a relevant article once in a while related to a specific question the team had that week can be helpful.
- Consult your classmates. They are your greatest resource.
- As much as possible, try to anticipate the needs of your patients and your team. Be proactive. Don’t constantly repeat, “Is there anything I can do?” Pay attention on rounds – if it’s mentioned that someone needs to obtain old records or perform a Mini-Mental Status Exam, volunteer!
- No one expects you to know everything. That’s why you’re here.
•♦ The Team ♦•

→ A note on what to call people: interns and residents will definitely want you to call them by their first names, so feel free to do that from the start. Fellows will probably want you to call them by their first names too, but you could start with “Dr.” if you feel nervous. With attendings, always address them as “Dr.” unless otherwise instructed.

Intern: The intern, also known as a PGY-1 (post-graduate year 1), is in his/her first year as an MD/DO and has primary responsibility for the day-to-day needs of the patients. He/she is often overworked and sleep-deprived and will gladly welcome any help provided by students. Many interns will return the favor with informal teaching sessions related to routine work on the floor. Expect to spend much of your time with the intern. They can be an incredible source of information in preparing presentations and caring for patients. While on some rotations they do not directly evaluate medical students, on others they do, and residents and attendings often ask for their input at the end of the rotation.

Resident: Residents are also known as PGY 2s, 3s etc. or sometimes JARs and SARs (junior and senior admitting resident). This person makes certain that the team runs smoothly, makes routine patient care decisions, and oversees the activities of the interns and medical students. Their responsibilities will vary depending on their level of training and specialty. Residents have had more years of experience and often have the most time and interest in teaching about various topics during your rotation. For many residents, teaching medical students is an expected part of their responsibilities. They are also the ones who will most often provide you with direct instructions on which patients to follow, surgeries to attend, etc. The resident evaluation is a major component of the medical student grade, along with the attending evaluation.

Chief Resident: Depending on the specialty, either a resident in their senior year of residency (OB-GYN, Surgery) or a resident spending an additional year before starting fellowship or becoming an attending (Internal Medicine, Pediatrics). These residents are “the best of the best,” selected by the program leadership. Their role varies from specialty to specialty, but usually they are involved in scheduling and overseeing all the junior residents in their program. In some cases, they may act as a “Junior Attending” and be the attending physician on a service.

Fellow: After having completed residency training in a general field, these individuals are pursuing specialty training as clinical fellows. For example, after completing five or seven years of training in general surgery, physicians may elect to spend three additional years of training as fellows in cardiothoracic surgery. The exact responsibilities of fellows depend on their position and field of interest. While your contact with fellows as a 200 student will be limited, you will undoubtedly encounter them when you consult subspecialty services, in the clinics, and in the operating room. If you are on a team with a fellow, they are unlikely to evaluate you.

House Staff: All physicians in training are collectively referred to as house staff/house officers.
**Sub-Intern (Sub-I):** A senior medical student who is taking an advanced course in which they take on many of the responsibilities of an intern. On some teams, the Sub-I or Extern will take the place of an intern, while on other teams, they will function in addition to the existing two interns.

**Attending:** The attending physician has completed formal training and finally has a *real* job. Attendings have titles such as Assistant Professor, Associate Professor and Professor depending on their level of experience within the department. The attending is ultimately responsible for the care of patients on your service and accordingly will make all major decisions regarding patient management. He/she runs attending rounds and is the person to whom you will present your patients. The attending is often the person who asks you the most questions, and he/she is usually responsible for writing your primary evaluation for the team. While you should try to spend as much time with your attending as possible on the floor, in clinic, and in the OR, they are incredibly busy and often cannot be available for you. Realize that the degree to which your attending will teach you is very individual and discipline dependent.
Allied health professionals are essential in the care of patients and can be extremely helpful to the beginning medical student. Many of the senior nurses, therapists, and clerks have outlasted generations of students and residents and, by virtue of that experience, deserve a great deal of respect. Don’t forget that they’ve seen students make the same mistakes over and over again throughout the years and you’ll have to earn the benefit of doubt. Always be respectful and pleasant with all members of the health care team and you’ll learn a lot from them.

**Nurses and Nurse Assistants**: RNs wear **Navy Blue** scrubs, CNAs wear **Maroon** scrubs. Nurses are in charge of overseeing the routine, vital aspects of patient care. Among other things, they implement physician orders, monitor patient vital signs and activities, and administer supportive care. Some will insert IVs and perform routine phlebotomy. Charge nurses are nurses that supervise individual floors. Scrub nurses run operating rooms and maintain the sanctity of the sterile field. Nurse Practitioners have advanced degrees and are able to perform some of the duties of a physician. CNAs (Certified Nursing Assistants, who do not have an RN degree) assist nurses in obtaining vitals and routine patient care activities. Staying on the good side of the nurses, particularly the charge nurse, is always a good idea.

**PAs**: Physician Assistants have bachelor’s degrees and then 2-3 years of graduate-level training, usually leading to a master’s degree. At HUP they work mostly on the surgical services, and may be part of the team of residents and med students, helping to do floor work or seeing patients in clinic. They often act in similar roles to residents on these services, except they do not usually operate.

**Unit Secretary**: Generally, clerks wear **Khaki** scrubs. Unit clerks handle floor business: they answer phones, schedule tests, complete paperwork, and generally keep things running smoothly. They typically sit at the nurse’s station and are an excellent source of practical information. Quickly learn which chair belongs to them, and do not ever sit there! They may also help with obtaining outside hospital records for your patients.

**Patient Care Observers**: Wear **Brown** scrubs. These staff, sometimes colloquially called “one-to-ones”, provide individual and continual observation for patients. They are not clinically trained and provide no nursing care. They are ordered by the physician for patients who are a risk to themselves, either overtly suicidal or, more commonly, delirious and pulling at lines and getting out of bed. They will usually stay in the room when you interview the patient, but you can ask them to leave if you want to have a private conversation or exam.

**Physical Therapy (PT)**: PTs and OTs often wear **blue Good Shepherd** scrubs. Physical therapists evaluate and treat patients suffering from physical dysfunction and pain resulting from illness. They emphasize motor rehabilitation training in order to help patients regain joint mobility, strength, and coordination. (Think of them as dealing with gross or macro motor function.)
They also evaluate patients’ level of functioning and make recommendations for what level of care or rehabilitation a patient will need when he/she is discharged.

**Occupational Therapy (OT):** Occupational therapists also deal with physical dysfunction, but their goal is to help patients achieve independence in daily activities through exercise, fine motor skill repetition, and family education. (Think of them as dealing with micro motion.)

**Respiratory Therapy (RT):** Respiratory therapists administer nebulizer treatments, perform bedside PFTs (pulmonary function tests), and adjust ventilator settings in the ICUs.

**Social Work:** Social workers act as liaisons between the patient and the patient’s care providers, both within the hospital and out in the community. They assess the patient’s care network outside the hospital, arrange for nursing home or chronic care placement as needed, and participate in family education and support.

**Nutrition:** A service staffed by both physicians and registered dietitians (RDs), nutrition staff address patient care issues such as intravenous nutrition, special diets, cachexia, etc.

**Chaplaincy:** This service provides inpatients with worship services and spiritual counseling.

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**Organization**

While your responsibilities and opportunities as a student will vary a great deal from month to month depending on the clinical rotation and your team, the basic structure and general principles that direct your activities are consistent throughout the clerkships.

Your ability to get organized and stay organized will be very important in your future as a student, a resident, and eventually as an attending physician. Regardless of your rotation schedule, you will quickly develop a personal system for recording and accessing patient information.

Even though you will likely only be assigned 1-3 patients to follow closely and present on, having access to some information for all of the patients on your team will be helpful. This will allow you to follow along on rounds and write down any tasks that you can help out with later in the day. It will also demonstrate that you are interested in helping to care for everyone on your team – not just your own patients.

Most students and residents use printed copies of the day’s sign-out (a list of patients on the service with a one-liner, test results, active medications, etc.), accessed from Sunrise, to take notes on pertinent information for the patients they are following as well as keep a list of to-dos. Ask your interns and residents how to print the sign-out, and try out the different formats available to find which one you like best. You can also carry a stack of bound index cards, with a different card dedicated to each of the patients that you are following. Some carry a clipboard...
with a separate sheet for each patient, while others manage with loose, jumbled scraps of paper. Many students opt to create their own sheets with pre-printed patient information templates.

\{ Rounds \}

Regardless of the specialty, all of your clinical rotations involving the care of inpatients will involve rounds. Rounds provide structure for the interaction between the patient and the health care team, and between members of the health care team itself. For some of your clinical rotations, you will be responsible for individual patients who you “pick up”. You will be most involved in the care of these patients throughout their hospitalization, and these will be the patients you present every day during rounds. Alternatively, on your surgical rotations, you will make small contributions to the care of all of the patients on your service as a team member and will not necessarily follow individual patients. Again, while your specific responsibilities will vary, the majority of your clinical experiences will involve rounds.

\{ Pre-Rounds \}

*This section applies primarily to rotations in which you will follow individual patients, such as in medicine and pediatrics, but the general principles apply to the majority of your clerkships.*

On most services, you will begin a typical day by “pre-rounding” on your patients. The goal is to find out what happened with the patient since you left the night before so that you can update the team on the patient’s progress. Here’s what information (generally speaking) you are expected to gather and where to find it:

- Subjective assessment of the patient: how your patient has been doing since the previous day *in the patient’s own words*. For example, how has their chief complaint been doing? If they were admitted for a COPD flare, is it better or worse since they’ve been started on medications? You’ll want to ask if they have any new complaints or concerns as well.
- A note on waking patients up: many medical students feel anxious (naturally) about waking patients up in the wee hours of the morning. However, it is expected that you will have spoken to your patient before rounds begin, so it is best to just go for it and empathize with your patient about how tired you both are. The only exception to this is on your pediatrics rotation, where it may be acceptable, in some circumstances, to just talk to the patient’s family members without waking a child from sleep.
- Perform a brief, directed physical exam: This always includes the basic four systems (heart, lungs, abdomen, extremities) as well as relevant systems for that patient (e.g. surgical wounds).
- Vital signs: temperature at the time ($T_{current}$) and maximum temperature overnight or over the past 24 hours ($T_{max}$), BP, heart rate, respiratory rate, and pulse ox (always
record the level of oxygenation – e.g. “on room air”, “2L nasal cannula”), total intake and output (I/Os) over the previous 24 hours, weight if appropriate, drainage from any surgical drains/chest tubes, finger stick blood glucose, etc. In Sunrise, this information can be found in multiple different places and displayed in multiple different formats. If vitals ever look wrong or unexpected, definitely check them again yourself and look for trends. Vitals are often presented as the range of values over the past 24 hours (“heart rate ranged from 75 to 115 in the past day”), and sometimes it is useful to note when any abnormal values occurred (“the heart rate was within normal limits except for when it reached 115 during the fever at 6PM yesterday”). Most recent vitals and 24 hour ranges will also print on the daily progress note in Sunrise.

- Check for new results, including lab values and radiology reads. Recognize that certain results may not be “flagged” in Sunrise, so if you are expecting a result, check the relevant electronic system (usually MedView). This includes radiology scans and reads, echo reports, EEG reports, and culture data.

- Review any new progress and consultant notes in your patient’s paper chart. Consultants and attendings will often round after you’ve left for the night, and you’ll want to be up to date on all new activity in the chart. Often consultations are recorded in a separate section of the chart, so make sure not to overlook this section if you are expecting a note. Also look for notes written by the on-call resident overnight. When you start a new rotation, you should check with the intern to see if they would like you to get signout from the overnight team or if they want to do it themselves; signout is key in getting overnight updates on your patients, but the intern may prefer doing all of their signouts at once and then passing the information on to you. Review orders to see if there have been any major changes and/or if any consultant recommendations have been implemented.

- Quickly checking in with your patient’s nurse can be a great way to get the inside scoop on any issues with the patient overnight. Of course, don’t interrupt the nurses’ signout!

- Don’t be surprised if the intern knows things that you don’t: they were either the one there all night, or they got a quick morning report from the on-call intern. (Try to ask the intern if there is anything you should know about your patient before rounds so that you can present the information to the attending instead of having the intern report the updates. But don’t be offended if the intern forgets to touch base with you before rounds, they’re just busy and it’s not intended to make you look bad.)

Don’t be discouraged if you miss information early in your rotations. You’ll get better and faster every day, and each patient will only take about five minutes with practice (early on, be sure to leave yourself about half an hour per patient). Since each patient is also the intern’s responsibility he/she will usually also pre-round on your patients, and your resident might as well. If there’s time before rounds, the intern may kindly review any important developments with you before your presentation.

On surgical rotations, expect to pre-round on more patients, but in MUCH less depth. Your intern and residents will let you know exactly what information they like to hear on rounds.
They often just want to know overnight vital signs and fluid intake and output, but if they don’t tell you what they expect, you should ask.

\{ Work Rounds \}

After pre-rounding on surgical rotations, the housestaff team (usually without attendings) will review each patient’s progress and plan basic care for the day. (On non-surgical services, there generally aren’t separate work rounds, just one set of rounds with the attending.) Work rounds are usually done as “walk rounds” or “bedside rounds” where the entire team moves from room to room to see each patient. Occasionally teams may have “sit-down rounds” in a conference room prior to seeing the patients. When the team gets to one of your patients, briefly summarize the pertinent data from your pre-rounding, including your ideas for a daily plan. Use the SOAP format (subjective, objective, assessment, plan) that you will also use for the written progress note (see page 19 for more details). Presentations should be concise but complete, noting patient name, age, current problems, vitals, pertinent exam findings, study results and assessment/plan. For example:

P.D. is our 67 year-old gentleman with colon cancer, now post-op day #2 status post left hemi-colectomy with end-colostomy. Yesterday he finished his course of peri-op antibiotics. He reports no new problems overnight, states he tolerated ice chips yesterday without any nausea or vomiting. He was afebrile with a $T_{\text{max}}$ of 99.6°, BPs ranging from 130s – 140s over 90s, pulse in the 80s, respirations 14 -16, and pulse ox of 98% on room air. I’s and O’s yesterday 1500 cc/2000cc, with 100cc from his JP drain, for net 500cc negative. On exam, his incision is clean, dry, and intact, and the swelling and erythema around his ostomy stoma is decreased. Bowel sounds are now present. Plan is to advance his diet to clears and encourage ambulation and to follow-up on the heme-onc note.

Work rounds are highly chief resident or fellow dependent. While the above model is a good start, mold your presentations to her/his preferences. With practice you will likely start work rounds with a mostly pre-written daily progress note/SOAP note for each of your patients that you can complete as your team agrees on an assessment and plan. Again, this will vary. Occasionally you may need to have the note in the chart before rounds, in which case you can make a photocopy of the note to help you in your presentation. However, these notes are very brief and get much easier to write with practice. The amount of teaching you will receive during work rounds is variable, depending on the style of the resident and the number of patients on the service, as well as their level of acuity and complexity.

\{ Attending Rounds \}

Attending rounds are generally held soon after work rounds, but again, this varies with the service. On non-surgical services, there generally aren’t work rounds, and everyone rounds
together with the attending after pre-rounding. Attending rounds provide an opportunity for
the team to present and discuss old and new patients with the attending.

If you have admitted a patient that is new to the team the day before, this is the time during
which you will give the entire formal H&P. You will likely have discussed your patient with the
admitting resident the night before or in the morning before rounds. Many interns and
residents will volunteer to listen to a practice presentation prior to attending rounds. Take
them up on it! They will undoubtedly have invaluable advice on content and style, especially
early in the rotation. This is often your only contact with the attending, and a well-rehearsed
presentation will make a great impression. Do not sacrifice completeness early on because you
feel compelled not to read from your notes or because your presentations are longer than
those of the interns. At this stage in your training you should focus on being thorough. Your
attending will likely want to hear more detail from you than from the interns, to make sure that
you are obtaining all the relevant data and thinking through the differential clearly. Over time,
try to do more of the presentation without notes. Start by delivering some of the HPI from
memory and gradually add more and more components of the presentation. Feel free to ask
your attending or resident about style preferences for the presentation; most will tell you if
they have something else in mind, so be flexible. Don’t be upset if your attending or resident
interrupts you to ask questions, add information, or discuss a teaching point – this is not a
reflection on your presentation, but is meant to help the team learn and understand your
patient better.

For patients who have been in the hospital for a while or don’t have many active issues, the
presentations can typically be brief. Try to adhere to the SOAP format as much as possible,
however, and do not give the entire formal H&P unless asked – only touch on the new
information (day before and overnight) and don’t rehash the social and past medical history
from admission, even if this is first time you are presenting the patient. A great way to figure
out what should be included in SOAP presentations is to spend your first day of rounds on a
new rotation noting what the interns and residents include in their presentations.

You should have read enough about your patient’s disease the night before to be able to
answer many of the questions that your attending will inevitably ask. Read for your own
education and understanding with some anticipation of likely questions, and you’ll do very well.
Think about the little things as well; e.g. be somewhat familiar with all of the patient’s
medications and why they’re taking them, even if it is not relevant for their current
presentation. Think about why a patient may have an abnormal lab value or physical exam
finding, even if incidental to their current disease process. Often, especially on the medicine
rotation, your resident will sit with you the night before to discuss the patient and prepare you
for questions that the attending will likely ask. Remember, you are absolutely not expected to
have an answer to every question. Attendings will often use a line of questioning to lead off a
teaching session and even the hardest questions of the morning are directed to the most junior
person in the room first (always you) before it trickles up to the chief resident. Look at it as a
chance to show what you’ve learned, to have fun thinking on the fly and, above all, to learn in
the process.
Attending rounds are variable from specialty to specialty, and formal attending rounds may not exist on some of your rotations. Surgical attendings often walk round between or after cases with only the chief resident or fellow, or they may round with the entire team at the end of the day. While you may have the opportunity to give bullet presentations on these rounds, you will likely not give lengthy H&Ps. Alternatively, you will have many opportunities to present new patients directly to the attending during clinic hours. While these presentations will be more directed, the usual style and general format apply.

\{ Topic Presentations \}

You will often be expected to give at least one brief prepared topic presentation during the course of a rotation. Seek advice from your residents about the length and degree of detail expected in these presentations. In general, focus on basic principles rather than minutiae, and remember that a concise and complete discussion of a focused topic is better than an exhaustive dissertation. If the attending specifies that he/she wants to hear a 5-minute presentation, be sure to keep it to 5 minutes because some attendings will cut you off if it’s too long. It helps to practice the talk and time it the night before. A one-page handout (one- or two-sided) is also a nice touch and adds structure to the presentation. Here is a general outline of how to approach a topic presentation:

- Try to pick a topic relevant to either a patient you are following or another patient on the service.
- Narrow your topic as much as possible. For example, if you choose to do a presentation on heart failure, narrow it to a specific cause (e.g. amyloid cardiomyopathy) and then narrow it even further (e.g. heart transplant in amyloid cardiomyopathy). It is often easiest to do an “Evidence-Based Medicine” presentation, discussing the evidence supporting a new therapy or diagnostic test, since the information is likely to be limited and easy to find. These presentations are also likely to be about new research, so you will likely be teaching your residents something, and maybe even the attending!
- Start with a 2-3 sentence presentation of your patient, if relevant to the talk.
- Cover the BASIC epidemiology, pathophysiology, clinical presentation, and diagnosis.
- Include a discussion of one or two relevant papers or review articles. You can find papers of interest by doing a PubMed search for your key terms (or via UpToDate – see below).
- UpToDate is a great starting point for a presentation to orient you to the topic. The references at the end are also an excellent way to quickly pinpoint the most recent and relevant literature on a topic without having to sift through all the results on PubMed. However, you’re definitely going to want to look at some primary literature and not just rely on UpToDate for your entire presentation.
• Have this information on a one-page handout (one-sided or two-sided) that you will distribute to your team. One good technique is to make a more detailed handout for yourself as you are researching your topic, then cut it down to make the handout you will give to your team. You’ll present from the more detailed version so you’re not just reading the handout that people have in front of them word for word. Having a figure or table or illustration is always a nice way to make your handout more interesting. Check out some example handouts from past AOA students in the “Sample Topic Presentations” section.

• Always put your name on the presentation and include a list of references at the bottom (try to include primary literature and not simply UpToDate).

\{ Call \}

As a student, your call schedule and corresponding responsibilities will vary from rotation to rotation. On medicine and pediatric services, your primary objective will be to help admit one or two new patients that you can present to the attending the next morning. While waiting for an interesting admission to come to your service, you should help your resident with the more routine duties of patient management. Once your new patient has been admitted and settled for the night, you should get home to work on your presentation and do the appropriate relevant reading. Alternatively, during some surgical specialties (e.g., trauma), you may be expected to take some overnight call and/or be on call from home (e.g., transplant services). During your Ob/Gyn rotation, you may have a week of “night float” where you’ll work from approximately 7pm to 7am to have the ultimate middle-of-the-night labor and delivery experience. Although exhausting, call is usually an incredibly rewarding and exciting experience for students. Because you’re one of the few people in the hospital, you have greater responsibility and opportunity in the care of your patients. Furthermore, you’ll get to see the initial presentation, work-up, and management of patients. The specific call responsibilities for each clerkship are detailed in the individual clerkship sections later in this guide.

\•• The Chart \••

The exact organization of a patient’s charted medical record is dependent on the hospital and ward in which that patient is located. It may be stored at the bedside, electronically, at some central nursing station, or in some cryptic combination of places. Fortunately, the essential components of the chart are consistent; they all contain sections for physician’s orders, administered medications, vitals, progress notes, lab and radiology results, etc. You’ll quickly learn where best to look to find or record information that is important to you. Ask residents, nurses, or the unit secretaries for help early in the month. Navigating patient charts is an essential skill that you’ll develop with experience. The chart is an important medical and legal document, so everything you write should be legible and clearly signed. Remember to have everything you write in the chart co-signed by a MD/DO, usually your intern or resident. Always date and time your notes, and include some identifying title before each entry (e.g. “MS-II
Admit Note” or “Medical Student Progress Note”) and after your signature at the end of the note, as well as a contact phone number or pager.

\{ The H&P \}

You have already had a great deal of experience learning how to perform and write a History and Physical Exam. As time goes on, your H&P will change according to your individual style, the rotation, and the patient. Generally, your write-ups will grow more concise over the course of your clerkship year as you gain a better understanding of what is relevant and what is not relevant. At most institutions, your H&P will be placed on the chart, complemented by an addendum or, in some instances, an additional complete H&P written by the resident. Do not be discouraged by this redundancy. It is often required by hospital policy. Look at your admission note as an opportunity to organize your thoughts about the patient, to learn to be concise and pertinent, to adopt convention, and to demonstrate your understanding to the attending who will undoubtedly read most of what you contribute to the chart. The basic H&P format is below. You will also be asked to submit formal, typed H&P write-ups for some clerkships. For examples of some formal write-ups done by AOA students, check out the Sample Patient Write-ups.

<table>
<thead>
<tr>
<th>H&amp;P Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Source of Hx:</td>
</tr>
<tr>
<td>CC:</td>
</tr>
<tr>
<td>HPI:</td>
</tr>
<tr>
<td>PMH:</td>
</tr>
</tbody>
</table>
Hospitalizations: reason for admission, when, where, treatments?
Surgical procedures w/ dates: Indications?
Trauma/Injury: residual defects or limitations?
Immunizations (most relevant in peds)
Transfusions

**Meds:** Include dosage and duration. Does the patient actually take them? Don’t forget to include over-the-counter drugs and herbal meds. Look back to the PMH to see if the patient may have forgotten to mention a chronic illness indicated by the med list.

**All:** Record allergies and reactions to medications and foods, or NKDA (No Known Drug Allergies).

**FH:** Include inherited diseases: ex. diabetes, heart disease, HTN, cancer, mental illness in all immediate family members. e.g., (+) HTN in mother, (+) DM in mother and sister, otherwise (-) for heart dz, CA, mental illness.

**SH:** Occupation: mention of relevant exposures to asbestos, etc.

In older patients, note their functional status (ADLs, IADLs, etc.).
Marital status, Children, Living arrangements:
Education:
Tobacco hx: estimate total pack yrs, currently smoking? If not, when did they quit?
ETOH use: estimate frequency and quantity.
IV or other illicit drug use:
Sexual and OB history: are they sexually active? With whom? Do they use protection against STIs? Have they been pregnant before? If so, what were the outcomes?

**ROS:** Be complete for medicine. Pertinent positives and negatives should be in the HPI. On many rotations it will be entirely acceptable to write: “ROS as per HPI, otherwise negative.”

**PE:** Abbreviations are difficult at first, but are pretty much standardized, so you’ll see the same ones over and over again with time, to the point where you adopt most of them in your own notes. Below is a list of common abbreviations in a typical and fairly complete, benign PE.

<table>
<thead>
<tr>
<th><strong>Write-up</strong></th>
<th><strong>Notes &amp; Translation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VS:</strong> T: 98.6°F, RR: 12, HR: 65 BP: 120/80 (sitting), Pox 100% on RA.</td>
<td>VS = vital signs; Pox = pulse-ox; RA = room air (or O₂ @...); may also include supine BP/HR (orthostatics).</td>
</tr>
<tr>
<td><strong>General:</strong> WD/WN male in NAD, resting comfortably on exam, appears stated age, pleasant and cooperative, AAOx3.</td>
<td>WD/WN = well developed, well nourished; NAD = No acute distress; AAOx3 = awake, alert, oriented to person, place and time.</td>
</tr>
<tr>
<td><strong>H:</strong> NC/AT; (−) temporal wasting.</td>
<td>H = head; NC/AT = normocephalic/atraumatic; note any lesions/rashes.</td>
</tr>
<tr>
<td><strong>E:</strong> Conjunctiva pale; (−) scleral</td>
<td>E = eyes; EOMI = extra-ocular muscles intact;</td>
</tr>
</tbody>
</table>
Icterus; (-) injection; EOMI; PERRLA; fundi benign; acuity 20/20 B/L c glasses.

**E:** Acuity grossly intact; (-) cerumen; TM gray, translucent c good LR B/L; (-) erythema; (-) exudate or d/c.

**N:** Septum s deviation; (-) rhinorrhea; nares clear B/L; (-) polyps/masses; sinuses NT B/L.

**T:** MMM; pharynx s erythema; (-) thrush; (-) exudate; dentition good.

**Neck:** Trachea midline; supple, good tone; full ROM; (-) masses; (-) LAD; (-) JVD; no thyromegaly, (-) nodules; (-) carotid bruit B/L.

**Chest:** CTA/P B/L all lobes; (-) W/R/R.

**CV:** RRR; nl S1/S2; (-) S3/S4; (-) M/R/G, PMI @ L 5th intercostal space.

**Abd:** Soft, NT/ND; (-) HSM; (-) masses; (-) bruits (aortic or renal B); (+) BS; (-) CVA tenderness

**Ext:** WWP; (-) C/C/E; 2+ radial, DP/PT pulses B/L; cap refill < 2 sec

**Skin:** Clear; unbroken; (-) rashes; (-) hypo/hyperpigmented areas; nl turgor.

**GU:** (-) vaginal (penile) d/c; (-) rash/lesions; (-) testicular masses; (-) inguinal hernia

**Rectal:** Good sphincter tone; prostate NT, not enlarged; brown heme (-) stool; (-) polyps/masses

**Neuro:** MS = mental status; CN = cranial nerve; RAM = rapid
MS: AAO x3
CN: CN II–XII grossly intact
Motor: See diagram below
Sensory: Grossly intact and equal to light touch, pin prick, cold, vibration
Coordination: (–) Romberg; intact RAM; (–) tremor
Gait: Normal gait; Intact heel, toe, heel-to-toe gaits.

MMSE results.

If indicated, perform and document a MMSE = mini-
mental status exam.

Abbreviated neuro exam can sometimes be
documented as “AAOx3, CN II-XII grossly intact; non-
focal exam.”

The arrows on the diagram indicate the direction of toe
movement during a Babinski test (up or down).

LABS: Chemistry, CBC, U/A etc.
Common abbreviated presentation of lab values:

**BMP/Panel 7 / Lytes**

<table>
<thead>
<tr>
<th>Na</th>
<th>Cl</th>
<th>BUN</th>
<th>CO2</th>
<th>Glucose</th>
</tr>
</thead>
</table>

**CBC**

<table>
<thead>
<tr>
<th>WBC</th>
<th>Hgb</th>
<th>Hct</th>
<th>plt</th>
</tr>
</thead>
</table>

DATA: EKGs, CXR, etc.

A/P: Start with a short summary of 3-4 sentences max. This should be very similar to the bullet you would deliver if your attending wanted a quick summary of the patient’s history and presentation. Follow by listing each active problem numerically with the most important first. In the ICU, you will organize your assessment by organ system (pulmonary, cardiovascular, endocrine, FEN-fluid/electrolytes/metabolism, ID, GU, GI, etc.). Each of the problems you list requires an in-depth assessment (especially in Medicine), which includes a detailed differential diagnosis. Support your thoughts with elements of the patient’s history, physical findings, lab data and procedure results. Conclude with a detailed treatment plan.

The last few problems on your H&P should always be:

# F/E/N (fluids, electrolytes, nutrition) – regular diet, NPO w/ IVF, cardiac diet, etc.

# PPx (Prophylaxis) – SQH (sub-cutaneous heparin), SCDs (sequential compression devices), PPI (proton pump inhibitor if patient is on GI prophylaxis).

# Code Status

# Disposition – stable on floor, will need PT eval for possible SNF (skilled nursing facility) placement, etc.

Don’t worry—your resident will almost always go over this with you the night before
In addition to the comprehensive H&P, every in-house patient you help admit and follow on a regular basis should have a daily progress note placed in the chart. At HUP, Pennsy, and Presby, a basic follow-up note can be printed from Sunrise and filled out during morning pre-rounding. On some services, you may be asked to write a note using the SOAP format without a template; a basic structure of the SOAP note is given below. You don’t have to wait for all of the day’s data to come back before writing a daily progress note as you can always write an addendum. It is very important to state that it is the “Medical Student Progress Note” as well as to include the date and time on all the notes or orders you write. Each page of the chart must also have the patient’s name and social security or medical record number. There are often stickers printed out at the beginning of the chart with this pertinent patient identifying information. You can use these stickers to put on the top of your progress notes.

### Progress (SOAP) Note Format

**Date/Time:**

**S:** Subjective information which includes what the patient tells you about how he/she feels. Also include pertinent events that occurred during the preceding night and possibly the previous day if applicable. Look through the nurses’ notes for additional information on the evening’s events or ask the nurse if you see him/her and have time.

**O:** Objective information including vital signs, I/O (“ins and outs”), pertinent physical exam findings, most recent labs, culture results and diagnostic test results.

**A/P:** Assessment and plan includes a brief summary statement of what you think are the active issues with the patient. This is often done as a problem list or by organ system as in the H&P. Note any significant changes since the previous day, and describe your plan for proposed treatment. For surgical patients, be sure to begin with “POD # (post-op day number...with the day after surgery being post-op day 1) s/p (status post) procedure”.

Signature
Print name, MS II/III
Phone number
It is a good idea to **include a list of the patient’s current medications with your SOAP note**, frequently recorded in the upper right hand corner of the page. Be sure to list any antibiotics that the patient is on, and the number of days they have been taking it.

### Pre-Op Notes

Pre-op notes are written for all surgical patients. The note is essentially a checklist to confirm that all of the required pre-op information has been collected and that the patient is ready for surgery. The note should be completed in the progress note section of the patient’s chart prior to surgery.

#### Pre-Op Note Format

Date:  
Time:  

- **Pre-op Diagnosis:**  
- **Procedure:**  
- **Pre-op Orders written:** *e.g. ABx, NPO, Bowel prep, etc.*  
- **Labs:** *CBC, electrolytes, PT/PTT, U/A.* *(results recorded prior to sx)*  
- **CXR:** NAD (no active disease), or note any abnormalities.  
- **EKG:** NSR (normal sinus rhythm), rate, normal intervals, axis, no ST-wave changes, or note any abnormalities.  
- **Blood:** Typed and crossed or screened (T&C/S), number of units.  
- **Consent:** Signed and on chart.  
- **Anesthesia:** To see patient, or patient seen, note on chart.  
- **Consultants - if applicable.**

  Signature  
  Print name, MS II/III  
  Phone Number

### OP Notes

Op notes are written in the OR (after the completion of the case) to document the procedure and findings. At HUP there are stickers that one can fill out and place in the chart at the completion of the case. Ask the circulating nurse where to find them.

#### Op Note Format

- **Pre-op Diagnosis:**  
- **Post-op Diagnosis:** may put “same”  
- **Procedure:** not what was scheduled, but what was actually done.
Attending:
Resident:
Student:
Anesthesia:  general w/endotracheal tube (GETT), (also known as General Endotracheal Anesthesia, or G ETA), local, etc.; ask the anesthesia resident if you’re not sure.
Findings:  confirm with the operating resident.
Specimens/Pathology:
Fluids:  type and amount administered, urine output; the anesthesia resident is the only one who can tell you this; ask gently, as they are often busy extubating the patient while you’re working on the note.  (But don’t worry—they expect to be asked, just make sure to ask when it’s a good time.)
EBL (estimated blood loss): again, ask anesthesia.
Drains:  list all those in patient after procedure (number, type, location); be specific because your note may be the only record of their position within the body.
Hardware:  only if relevant (e.g. joint replacement).
Cultures:  where they were taken from, and type requested.
Complications:  check with the operating resident.
Needle/Sponge counts:  correct x 2
Disposition/Condition:  e.g. Pt. tolerated procedure without difficulty.  Extubated in the OR and taken to PACU (post-anesthesia care unit) in stable condition.

Post-OP Checks

Post-op checks are progress notes usually written about four to eight hours after the completion of a case to document the patient’s immediate post-op condition and progress. Try to see the patients whose cases you helped with during the day. You’ll know them better than other patients and it’s a good way to learn to anticipate possible post-op complications. Use a modified SOAP note format:

Post-Op Note Format

Status post (s/p):  procedure and indication.

S:  include specific c/o (complains of) such as pain, nausea/vomiting (N/V), is the pt. ambulating, OOB (out of bed) to chair, voiding, passing flatus, taking POs (by mouth), adequate pain control?

O:  Vitals, as well as I/O from PACU (post anesthesia care unit) and floor separately, record any drain/tube outputs, and check labs if necessary.  On exam be sure to describe general mental status post anesthesia.  Listen for atelectasis on pulmonary exam. Check all dressings to ensure that they are C/D/I (clean/dry/intact by convention). Finally, give attention to any potentially serious complications, e.g. an expanding hematoma in the
neck following thyroid surgery that threatens the airway.

A/P: Pt. is stable/unstable/critical s/p procedure. Include problems and how you plan to address them. Include plans for diet, ambulation, dressing changes, fluid management, foley, drains, pain management, etc.

Signature
Print name, MS II/III
Phone number

\{ Delivery Notes \}

Delivery notes are written after delivery of every infant on the labor floor. These are often completed by the Ob/Gyn residents, but you may be asked to write one. The general format is as follows, with the exact details determined by the circumstances of the individual delivery (adapted from Maxwell’s):

\begin{center}
\textbf{Delivery Note Format}
\end{center}

On (delivery date at time) this (age) G____P____ (group B strep pos/neg) female under (epidural/pudendal/local/no) anesthesia delivered a viable (male/female) infant weighing ______ grams with APGAR scores of _____ and _____. Delivery was via (SVD*/LTCS**/classical CS). (Nuchal cord was reduced.) Infant was suctioned at the perineum. Cord was clamped and cut and infant handed to (pediatrician/nurse) in attendance. (Cord blood sent for analysis.) (Intact/fragmented/meconium stained) placenta with (2/3) vessel cord was delivered (spontaneously/by manual extraction) at (time). (Amount) of (carboprost/methylergonovine/oxytocin/other medication) given. (Uterus, cervix, vagina, rectum) explored and (midline episiotomy/___ degree laceration/uterus and abdominal incision) repaired in a normal fashion with (type) suture. Estimated blood loss (EBL) ______. (Patient taken to recovery room in stable condition.) Infant taken to newborn nursery in stable condition. Dr. __________ attending.

Signature
Print name, MS II/III
Phone number

* Spontaneous vaginal delivery.
** Low-transverse C-section.
A post-partum note, like a post-op check note, is basically a modified SOAP note focusing on the specific concerns of a post-partum patient. These are typically written daily for post-partum patients while they are in the hospital.

### Post-Partum Note Format

<table>
<thead>
<tr>
<th>Post-partum day #________</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S</strong>: Note any patient complaints or comments, as well as any nursing comments. You should also assess the patient’s current pain and pain control in past day. Note if the patient has any breast erythema/tenderness, any lower extremity swelling or tenderness, and the quantity/trend of the patient’s vaginal bleeding/discharge. Make sure to ask about urination, flatus/bowel movements (especially if it was a C-section), and ambulation. You should ask if the patient is breast and/or bottle feeding and check in about what type of birth control the patient plans to use.</td>
</tr>
</tbody>
</table>
| **O**: - Vitals (BP, pulse, respirations, temperature)  
- Ins/Outs (IV fluids, PO intake, emesis, urine, stool)  
- Physical Exam (focusing on breath sounds, bowel sounds, fundal height/consistency, incision/episiotomy condition, lower extremity tenderness/edema, Homan’s sign)  
- Meds (common post-partum meds: RhoGAM, pain meds, iron, vitamins, laxatives, contraception)  
- Labs (CBC, Rh status, rubella status, etc.) |
| **A/P**: Assessment and plan (i.e. medications, lab tests, immunizations, consults, discharge plan). You should always address contraception and breastfeeding (or formula) plan. |
| Signature  
Print name, MS II/III  
Pager number |

### Orders

A physician must write an order for almost anything to happen to a patient in the hospital, including medication administration, consultation requests, lab tests, and lunch. Orders must be entered electronically. You’ll be oriented to these systems and will be allowed to enter some orders, but all of your orders require the electronic signature approval of your intern/resident for activation. You’ll become more comfortable writing orders with experience. If you are ever asked to write a prescription for the patient to go home with, your intern or resident will teach you how to do this so just ask.
Nursing orders are a formal communication with the nurse, and it’s always helpful (and nice!) to add a “Thank you!” to the end. Examples of nursing orders:

- Please bring commode to bedside.
- Please check orthostatics in the AM tomorrow (11/16) only.
- Please start IVF (intravenous fluids): D5 1/2NSS (normal saline solution) @ 125 cc/hr on arrival to floor.
- Please make patient NPO (nothing by mouth) past midnight. Thanks.

Abbreviations used in ordering medications:

- **qd**: once a day - this abbreviation is no longer allowed on charts and you should write out “daily” instead; however, you will often still see or hear it
- **bid**: twice a day
- **tid**: three times a day
- **qid**: four times a day
- **q12**: every 12 hours (not the same as bid: q12 means at midnight and noon, bid means approximately when you wake up and before going to bed)
- **qAM**: every morning
- **qHS**: every evening (HS = hora somni, or hour of sleep)
- **qAC**: before every meal
- **prn**: as needed

Examples:

- Begin Furosemide 40 mg PO BID.
- Ceftriaxone 1 g IV q12" x 14 doses—first dose STAT
- Prednisone 40 mg PO daily x 2 days, then 20 mg PO daily x 2 days.
- Maalox 30ml q4"-6" PRN dyspepsia

### Admission/Transfer Orders

All patients need a standard, conventional set of orders when they are admitted or transferred between services and floors within the hospital. There are templates on Sunrise for admission orders for medicine, so ask your resident to show you how to use these. A useful mnemonic is: ADC VAAN DISML.

- **A** Admission: indicate floor, attending, and service.
- **D** Diagnosis: indicate reason for admission.
- **C** Condition: stable/fair/guarded/poor.
- **V** Vital signs: frequency (usually q shift or per routine, more often in unit)
- **A** Allergies: specific with reaction or NKDA (no known drug allergies).
- **A** Activity: e.g. bed rest, as tolerated, with assistance.
- **N** Nursing: include specific requests of nursing staff; e.g. pneumatic compression stockings on pt. at all times, foley catheter to gravity, ng (nasogastric) tube flushes q shift, strict I/ O's, daily wts, etc.
D  **Diet**: indicate restrictions such as sips, clears, regular, low sodium, cardiac, diabetic.

I  **IV fluids**: type, rate of infusion, duration (e.g. 2L or 24") or hepblock (e.g. insert an IV but don’t do anything with it) IV once tolerating POs.

S  **Special Requests**: e.g. commode to bedside

M  **Medications**: include name of drug, dose, route of administration, and frequency as above.
  Remember prn medications such as tylenol and benadryl with resident approval.

L  **Labs and Studies**: e.g. P7, CBC, PT/PTT, CXR, EKG in am.

**Remember**: Have your orders reviewed, approved and co-signed by a physician, and do admission orders once or twice first with an intern or resident before doing it on your own.

☆☆ **Electronic Medical Record Systems** ☆☆

There are many EMRs you will be using during your clerkship: PennChart on outpatient medicine and inpatient and outpatient pediatrics, Sunrise on inpatient UPHS sites, CPRS at the VA, and possibly some other EMR on your outpatient pediatrics or medicine rotation, depending on where you are placed. You will receive training in each of these systems prior to starting the relevant clerkship, but most of the learning will be done “on the job,” as you attempt to find information and enter notes and orders during your time on the wards. Use your residents, interns, and sub-interns to help you navigate the various EMRs. Be prepared for a good amount of computer errors and annoyance, but recognize that learning to use your resources, in this case EMR, is part of your clinical education and is necessary to be an effective medical student, and in the future an effective resident. Recognize that the same thing can usually be done multiple different ways, and the same information is usually displayed in multiple different fashions in the same EMR (for example, input/output data in Sunrise), so learn all the different methods and choose the one you find easiest and most useful. One of the key things to learn about each EMR is how to set up “flags” for your patient so you are informed of new changes: orders, results, and notes. If you have any trouble accessing or using any of these systems, call the IT Help Desk at 215-662-7474. Below is a brief overview of the different electronic systems you will be encountering throughout your clerkships:

**PennChart** – PennChart is used in both outpatient medicine and pediatrics as well as inpatient pediatrics. It is a very common EMR nationally, and you may use it during your residency, no matter where you end up. It is relatively easy to use, with “tabs” for multiple patients and for different parts of the chart. If you are writing notes in PENNCHART on your outpatient rotations, it is helpful to learn “Smart Phrases” to pull medication lists and lab results into your notes. Don’t neglect to use PennChart for “chart biopsy” when you are on inpatient rotations, since it is a great source of information about patients’ PMH and home medications. You may need to call the Help Desk to get access to some of your outpatient clinics’ schedules, and if you are on inpatient, you will have to “Break the Glass” to access patients’ charts for inpatient use – this is okay, as long as it is for a medical purpose.
Sunrise – Sunrise is the inpatient EMR used at UPHS sites (HUP, Pennsy, Presby). It consolidates orders, lab results, and vital signs, as well as some notes from allied health professionals (PT/OT, speech, nutrition, social work, chaplain), but does not include physician notes or consult notes (these are in the paper chart). There is a “sign-out” incorporated into Sunrise where house staff keep a copy of the HPI, PMH, home meds, and continually update the assessment and plan. The sign-out and daily progress notes (with pre-printed medication lists and vital signs) can be printed in several different formats. Be sure to print the blank progress notes (with just vitals and medications) for your own notes rather than to use the ones with the residents’ A&P filled in from the sign-out.

CPRS – CPRS is the national VA EMR, accessible from any VA across the world. It is an older EMR (started in the 1970s!) but is incredibly useful, with a complete VA medical record detailing all interactions the patient had with the system at any VA hospital. It consolidates both inpatient and outpatient information along with medications, notes, and lab results, making chart biopsies much easier.

Other electronic systems:

- **Medview** – Medview can be accessed from within Sunrise, PennChart, or Emtrac, or from the UPHS Intranet homepage. It consolidates all lab and radiology results, and is the only location where you can actually look at UPHS radiology images and EKGs yourself (rather than just the physician reads available in the other EMRs). It also pulls in information from PennChart and Sunrise so you can view all of a patients’ UPHS inpatient and outpatient visits, PennChart medications, Sunrise sign-outs and discharges, and more. If you access Medview via a web browser (rather than through another EMR), you can also view old UPHS inpatient paper medical records that were scanned into the computer through either eWebHealth (through 2011) or OnBase (since 2012).

- **Penn Access Manager** – PAM links your separate accounts for Sunrise, PennChart, Emtrac, and Medview so you can sign into a UPHS computer and then not need to sign on again to any of the individual programs. You access it by clicking on the program in the toolbar at the top of the screen after signing on to a UPHS computer. It will not work unless you first sign up for it, however, which you can do on the PAM website (search for “Penn Access Manager” on the UPHS homepage to find it).

- **Coast** – Coast provides scheduling for many of the UPHS residency programs, and you can find out your own call schedule and members of your team on this website. You can access it through the UPHS Intranet homepage – Housestaff Portal (Pulse) – Quick Links (Coast scheduling).

- **Visicu** – Visicu is another EMR-type software for some of the UPHS ICUs. You may encounter it if you are assigned to the HUPSICU for your surgery clerkship. It presents patient information in a slightly different fashion than Sunrise, and is used to create an electronic progress note that can be printed for the paper chart. You will need to get access via the IT Help Desk before using the software.
Navicare – Navicare is the nursing patient tracker at UPHS inpatient sites, which shows where each patient is in the hospital at every moment. It is also used in the ORs to track operations, and is updated to show the stage of the operation (anesthesia, draping, incision, closing). There are a lot of icons that show various things about patients (contact precautions, one-to-one), but the most important thing for medical students is to learn how to use it to find where a patient is if they aren’t on the floor (in radiology, the OR, PT). Navicare is displayed on big TV screens near the nursing station on every inpatient ward, and you can use it to find patients as long as you return it to the same screen when you are done. It is also accessible on all computers. You can sign on with most floor names (i.e. “founders14”), the password being the same (“founders14”).

Accessing EMR Systems From Home

If you have any problems, call the IT Help Desk at 215-662-7474

UPHS Extranet – Through the Extranet, you can access all the same webpages as the Intranet (including Medview) and access UpToDate from home as well. You can log onto the Extranet at https://extranet.uphs.upenn.edu, and click on “UPHSNET” to access the UPHS Intranet Homepage. Your log-in is the same as your Medview log in. To set up UpToDate, login into the Extranet, click on “UPHSNET”, search in the search bar for “uptodate”, click on “UpToDate” Intranet, and click “Here”. You can then add this page to the Extranet Home Screen by clicking the plus sign in the top right corner, and then click the home screen button (snowflake/asterisk symbol) to see the link on your home screen.

PennChart – PennChart can also be accessed through the Extranet, through the “PennChart Hyperspace Web” link. You may need to call IT Help Desk to link your Network ID to your PennChart account if you have not already done this through Penn Access Manager (see “Other Electronic Systems” above).

Accessing EMR Systems on iPads

Some find that iPads are useful to log onto the various EMRs and pull up new lab results during rounds or when the computers are all occupied. Access to the EMRs from iPads can be difficult to achieve, however, so set this up in advance of a rotation if you think you want to use it.

Accessing Sunrise, PennChart, and EMTRAC via Citrix Receiver

1. Download Citrix Receiver from the iTunes App Store
2. Connect to UPHS-fast network to set up the application
3. On the initial screen, click to add a new account. If you have used the app previously for another account, click on “Settings” in the lower right corner and then the “+” sign in the upper right corner to add a new account.
4. Enter the following link in the “Address (URL or work email)” prompt: http://uphiisndc001.uphs.upenn.edu/
5. Enter your Medview/Network ID username and password, and the domain “UPHS”.

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**Accessing Sunrise information** – There is a version of Sunrise that is accessible on your mobile device. Most recently, the app was called Carelign. At the typing of this guide, there is a new app under development that will likely be available by the time you start clerkships. These apps are very helpful as they allow you to view patients’ recent lab and radiology results (only a few specific labs are supported, however), as well as medications, contact information for the patient’s care team, and the patient’s room location. Once you set it up, you can access it from anywhere without connecting to the UPHS network, just by entering a four-digit PIN to sign on. This is really useful on rounds to look up labs, but remember that it only shows certain common labs (CBC, BMP, coags) and the medication data is usually a bit faulty. Your residents and interns will be familiar with whichever app system is in place when you start clerkships so just be sure to ask them to help you get the latest version.
Filling Your White Coat

The contents of your pockets will vary between rotations and with experience, but in general:

For the minimalist:

1. Stethoscope: put your name on it with tape, a patient ID bracelet, or some other tag—and never let it out of your sight.
2. Reference handbook for current rotation; e.g. *Pocket Medicine* —useful for almost all rotations!
3. Note cards, paper, or whatever else you feel comfortable using to keep patient information organized and easily accessible.
4. Several pens: Have lots of them because you will lose them and/or lend them out. Most hospitals require black ink for charts.
5. Penlight
6. Smartphone or iPad with access to medical apps.

Also useful:

7. Jay Sanford's *Guide to Antimicrobial Therapy*
8. *Maxwell Cards* for quick reference for normal lab values, standard forms for notes, etc.
9. Clipboard. You can find a folding clipboard with useful lab values printed on it at mdpocket.com or on Amazon by searching for “White Coat Clipboard”.
10. Scissors or trauma shears (especially for surgical rotations)
11. Tape, gauze, gloves, ABG kits, lubricant, hemoccult cards, tourniquets, etc.
12. SNACKS! You will get hungry on rounds. To prevent yourself from getting hangry (hungry+angry), keep some snacks in your pocket for occasional munching.

Rotation specific accessories such as a gestation wheel in obstetrics, a reflex hammer for neurology and medicine, growth charts in pediatrics, and skin staple removers in surgery will become obvious as you go along. Detailed recommendations are included later in the sections dedicated to each clerkship. You’ll feel more and more comfortable without certain things as your coat gets heavier, but you need to come to that point on your own.
A Brief Word About iPads

iPads are still a new part of the clerkship experience, with the class of 2015 as the first class to use them in the clinics. As such, their utility is still being discovered, and a lot of residents and attending physicians may be unfamiliar with the best way to make use of them in the hospital. Many of the clerkships (Medicine, for example) discuss iPad use during orientation and provide a list of useful apps. Similarly, the MSG website has the results of the Medical App Survey so you can download apps that your classmates found most useful. You can also find a list of useful apps in this book, as well as instructions for accessing the various electronic medical record systems on your iPad. Please note that your iPad must be set up to access the EMR, and this usually requires a phone call to IT to set up correctly.

We have surveyed the class of 2015 on how they used their iPads during clerkships, and the general conclusion was that most students found them less than helpful. Many students considered them cumbersome and with minimal utility, given that most useful apps are also accessible via smartphones. They remarked that the iPads were useful only during “sit-down rounds” or during downtime. Some of the more tech-savvy students found them helpful for accessing the electronic medical record when no computers were available at peak use times, given that smartphones have too small a screen to reliably use the software. Students warned that using an iPad during rounds to look up information is acceptable, but you must be clear about what you are doing and judge your audience (attendings and residents) to make sure that they don’t think you are checking e-mail or playing games. This is especially useful on Medicine and Pediatrics inpatient rotations, when you can be helpful to the team by looking up lab results that may not have been available at the beginning of rounds, or to investigate the answers to clinical questions that arose during team discussions. They can also be useful to show images and diagrams when giving a topic presentation. However, it is important to note that despite this utility, the majority of students didn’t use iPads for any clinical purpose, only using them to study (textbooks, flash card apps, and USMLEWorld question bank app) during downtime. Many of the study guides for the shelf exams are also available as iBooks and/or as free PDFs.
Useful iPad Apps

Listed below are the top contenders from the “MSG 2012 Medical App Survey Results”, with some additions/comments from our surveys of the MS3 class and our own experiences.

Apps to look things up:
1. Epocrates Essentials – Free for PSOM students. You can register at https://www.epocrates.com/EFMSLanding.do?CID=EFMS. This essential resource provides you with drug information and dosing, an interaction checker, pill ID program, and multiple medical calculators and tables, among other resources.
3. Rolodoc - provides contact information for consult services at HUP. Your intern/resident should be able to help you with this.
5. QxMD Calculate (Free) – Clinical calculator
6. Dynamed – Free for PSOM students. Access it by following the instructions on this website: https://dynamed.ebscohost.com/access/mobile. Provides clinically-organized summaries on more than 3,200 topics.
8. Micromedex (Free) – Essential resource for drug information and dosing
9. Wikipanion (Free) – The most important resource of all: Wikipedia!
10. AHRQ ePSS (Free) – From the U.S. Dept. of Health and Human Services, “to assist primary care clinicians identify the screening, counseling, and preventive medication services that are appropriate for their patients”
11. Shots by STFM (Free) – Up-to-date immunization reference
12. Growth Charts (Free) – As the name implies, pediatric growth charts
13. Diagnosaurus ($1.99) – Free online. Differential diagnosis builder
14. UpToDate – you can access UpToDate on your mobile device by first going to the UpToDate website from a UPHS computer. At the top right of the screen, you have the option to “register” for an account. Once you do that, you can access all that UpToDate has to offer from your phone without being remotely connected to UPHS.

Apps to study with:
1. USMLEWorld QBank (Free, with subscription) – access USMLEWorld on your device!
2. Your favorite flashcard app of choice
3. PDF reader and editor for textbooks, study guides, etc.
Always have everything you’ll need for a given procedure with you when you go into the patients room. This makes you seem more professional and inspires confidence in your abilities.

**Before you do a blood draw:** Grab an emesis basin, water bucket or empty cardboard gauze box and fill it with the following:

- Gloves that fit (gloves that are too big increase the risk of sticks)
- Tourniquet, alcohol swabs, small gauze pad, and Band-Aid
- Vacutainer needles or butterfly needles (more than one, because nobody’s lucky *all* of the time)
- Vacutainer needle holder
- Appropriate specimen tubes (always bring extras) or blood culture bottles
- Specimen bags
- For blood cultures bring Betadine swabs (at least 6)
- Pre-stamped and completed labels and lab forms

**Selecting appropriate tubes:**
Tube color designations may vary from one hospital to another. If you ever have any questions, just call the Lab and ask. Commonly used tubes at HUP are as follows:

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Tube color</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Lavender</td>
<td>2. Direct Coombs</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1. Red</td>
<td>1. Electrolytes</td>
</tr>
<tr>
<td></td>
<td>2. Lavender</td>
<td>2. Hgb A1C</td>
</tr>
<tr>
<td>Coagulation</td>
<td>1&amp;2. Blue</td>
<td>1. PT, PTT and other clotting assays</td>
</tr>
<tr>
<td>Hematology</td>
<td>1. Lavender</td>
<td>1. CBC</td>
</tr>
<tr>
<td></td>
<td>2. Green</td>
<td>2. Hgb electrophoresis</td>
</tr>
<tr>
<td>Immunology</td>
<td>1. Red</td>
<td>1. Specific serum Ab detection</td>
</tr>
<tr>
<td></td>
<td>2. Lavender</td>
<td>2. Cell surface phenotype</td>
</tr>
<tr>
<td></td>
<td>3. Green</td>
<td>3. HLA type</td>
</tr>
<tr>
<td>Molecular Dx</td>
<td>1. Lavender</td>
<td>1. PCR and DNA analysis</td>
</tr>
<tr>
<td>Toxicology / Endocrinology</td>
<td>1. Red</td>
<td>1. Drug/hormone levels</td>
</tr>
<tr>
<td></td>
<td>2. Lavender</td>
<td>2. Cyclosporin Levels</td>
</tr>
</tbody>
</table>

**To prevent dangerous clerical errors, samples going to the blood bank for type and cross or screen of blood products require special pink labels for processing. Be sure to sign the pink label and the requisition slip carefully, and make sure the stamp on these labels in entirely legible.**
Otherwise, the samples will be discarded and you’ll have to draw them again. Be sure to ask your resident for help the first time you attempt this process.

Have an intern or resident help you through the first few and then have a go at it alone when you feel ready (after checking with a resident or intern first). Ask for help if you’ve tried a couple of times without success (nurses can also be a huge help with this). No one will be upset with you, honestly, and you’ll learn from others’ approaches. Also, don’t resort to asking the patient if they know of any good veins you could try next. It makes them uncomfortable.

•♦ Cellular Phones ♦•

Make sure your team has a way to get in touch with you at all times in the hospital. It is also important to update your UPHS phonebook profile so that it has an up-to-date contact number, and make sure that the Sunrise contact number is also correct in case you sign on to be the primary care provider for a patient (ask your resident to help you find out where your Sunrise contact information is located). If you feel uncomfortable using your personal cell phone number for professional purposes, some students choose to set up a Google Voice account and forward that number to their cell phone.
Module 4: Core Clerkships

The four-block system designed for Module 4 combines different specialties of medicine that have some similarities in content and approach. Each student will rotate through four 12-week blocks that include two or three separate clerkships and integrated didactic material. There are generally multiple locations at which the clerkships can be completed, and you will have an opportunity to select among these sites. When more than one site is offered, there is typically some variation between them, and you will want to talk to other students to find out which site may best match your interests. Ultimately, however, there is central standardization by the course director in terms of grading requirements. For most clerkships, regardless of your site, you will be at HUP on Fridays for didactic lectures. Course specifics such as weekly schedules, write-up requirements, lecture topics, and evaluation schemes have been excluded from the following discussion. These materials will be given to you on the first day of every rotation.
Internal Medicine/Family Medicine

The 12-week block is broken down into 8 weeks of inpatient medicine and 4 weeks of family medicine. Inpatient medicine is a fun, but rigorous, 8 weeks. During this time, you will feel more like a “doctor” than you will on most other rotations – you will have quite a bit of responsibility and will hopefully feel like you’re learning something each day. Family medicine is a 4-week block. During this time, you will see patients of all ages with a large variety of concerns, from children needing well-child care, to pregnant patients, to the elderly.

What students remembered...

“...When - because I was a medical student - I was the only one on the team who had the extra time to sit with my terminally ill and nearly comatose patient’s family each and every day to learn more about what he was like and what he would have wanted. You really appreciate the fact as a medical student that because you only have a few patients that you are responsible for - unlike the senior residents and the attendings on the team - you are sometimes the only one with the luxury of truly getting to know the details of your patients’ lives and wishes.”

“...When a patient thanked me for being the only one to stick by his side throughout the admission.”

“...When my patient who had been unconscious and non-responsive for 3 days opened her eyes and looked at me and smiled. Of everyone who would try to get her to respond to them as her consciousness waxed and waned during the rest of her hospital stay, my voice, more than anyone else’s on the team, was what she responded to the most.”

“... When I was the only person on the team who was able to convince my patient that the next step in his cancer therapy was radiation.”

“...When I got to tell the wife of a man with decompensated end stage liver disease that he had been approved to be placed on the transplant list. He got his liver 2 days later.”

“...When I brought my patient who had been in the hospital for 3 weeks a milkshake and sat with her while she cried.”

The Team

There are several different team structures and organizations. Some teams are broken down into multiple sub-teams with one attending. In this case, each sub-team has its own supervising resident, as well as interns and/or a sub-intern, and one or two medical students.
• **Sub-I**: This is a 3rd or 4th year medical student doing an advanced elective in medicine. They are usually very approachable and good people to ask questions that you are afraid may be stupid. Not all teams will have a sub-I.

• **Intern**: First year residents who are responsible for the majority of the daily work on all of the team’s patients. You will likely interact very closely with your intern – the patients you cover are ultimately their responsibility as well. For the most part, your intern will give you as much autonomy as you like in terms of caring for your patients; however, s/he is ultimately responsible for your patient’s well-being and will have to cosign all of your orders (or your resident).

• **Supervising residents**: Each team will be supervised by a 2nd or 3rd year medicine resident (JAR—Junior admitting resident or SAR—Senior admitting resident). Your resident will not carry any patients directly but will instead oversee care for all patients covered by you, your intern, and your sub-I. They are also responsible for most informal teaching that takes place on the rotation.

• **Attendings**: You will round with them each day (sitting or walking rounds).

**Sites**
The 8 weeks of this clerkship are most often broken down into 4 weeks of “general” medicine, either at HUP, the VA, Pennsy, or Presby, and 4 weeks of sub-specialty medicine, primarily on services at HUP. However, it is possible that you will end up with only 2 weeks of sub-specialty medicine or none at all. See the “Call” section below for more information on schedules and call.

**Your Responsibilities**
The goal of the medicine rotation is for you to feel as if you are the primary point person for the care of your patient. It can take time to build up to this level of involvement and responsibility, but if you carry out the activities described below with enthusiasm and integrity, you will eventually begin to feel as if you are capable of taking charge of your patients. As a part of your team, you will be responsible for carrying 1-4 patients at all times. “Carrying” a patient implies that you “picked-up” the patient during a call day (or occasionally picked up a patient who came in overnight and was seen by the night float team) and presented him/her on rounds the following day.

• **Picking up a patient**: Ideally, picking up a patient means that you are helping to admit that patient to the hospital (i.e. doing the initial intake, discussing admission orders/tests with your resident, and then presenting the H&P the next morning on rounds). Sometimes, however, timing is poor and instead you will be asked to pick up a patient who has already been admitted to your team by someone else. You will only be able to pick up a new patient on the days your team is on call; the frequency of this will vary depending on the service. You are expected to pick up 1-2 patients per call day, depending on the admitting structure. Your JAR/SAR will tell you which patients you should help to admit. Depending on the preferences of your team, you will work with your intern and/or resident to admit patients. Before you go to see your patient, check
in with your intern or resident. Many interns prefer to go with you when you see the patient so that the patient doesn’t have to be seen twice, but others will tell you to go ahead by yourself. It is most courteous to ask first. Before seeing the patient, you should read through the chart, review ordered and current labs, radiological studies, and EKGs. Review Medview for past discharge summaries and/or labs. When you see the patient, take as complete a history as you can and do a complete physical exam. After you’ve seen the patient, write a complete admission note (HPI, past medical/surgical history, family history, social history, medications, allergies, review of systems, physical exam, labs/ studies, assessment and plan) and do your admission orders if your intern wants you to do them (early on, you may want to start by watching your intern put them in—then you can progress to putting them in on your own after the first week or two). Methods of order writing will vary with your site, and your intern will show you how to enter orders.

- **Presenting your patient:** You will present your patient to your JAR/SAR during your call night, and he/she will help you develop your treatment plan. For practice, try to do this presentation formally, as you will for your attending the following morning. The following day, you will present your new patients to your attending on rounds. This is a formal presentation that requires you to speak in front of your team – it is not meant to be intimidating, but it can be. The best way to handle this is to prepare WELL the night before. Think about it as your time to shine! A good history and physical will not go unnoticed by your attending, but the real place to shine is during the assessment and plan portion of your presentation. Try your best to put your money down on the most likely diagnosis – it’s ok if you get it wrong! Talk to your intern/resident for help with this! It’s really ok to adopt the plan they give you – don’t get heroic unless you know what you’re doing. You shine by researching and learning about the plan once you go home. Many attendings also appreciate if once or twice on the rotation you bring in an article that may contribute to your patient’s care (note: this is not necessary for every patient. Also, if you are paired with another medical student, it’s considerate to check with them before doing this, so that you can both prepare something, and no one looks bad. Alternatively to bringing in a paper, verbally referencing a paper you looked at is a super strong move, and feels a little less gunner-y).

- **Daily patient care and note writing:** You will see your patients before rounds every day (“pre—rounding”). After pre-rounding and getting signout, write a note; you can use the progress notes on Sunrise and fill in overnight events, new physical exam findings, and a plan for the day in a SOAP note form. You should write the majority of your notes before rounds, but your assessment and plan may change after discussion with your attending, so leave some space for this. Before your note goes in the chart, your intern or resident should co-sign it. Make sure you find out if your attending expects your note to be in the chart before a certain time in the morning—if he/she does, it’s a good idea to photocopy the note so that you can use it as a guide when presenting the patient at rounds.
• Stop in to see your patients at least one additional time throughout the day, if not multiple times! This is your opportunity to begin to understand what it means to be a physician. The more involved with your patient (and their family, if they are around) you are, the better you will be able to help them with both their medical and social issues. Patients for the most part love having medical students around, and they feel better cared for when people from their medical team see them more frequently (and yes, that includes YOU!) Knowing your patient better will allow you to formulate better daily plans for them, will make YOU look better to your team, and will help provide better overall care for your patient.

• **Patient discharge**: Your team will decide when each patient is ready to be discharged, but you should start thinking about discharge relatively early on in the patient’s stay. Discharge planning is a great opportunity for you to be helpful as a medical student and make your team love you! To be discharged, the patient will need good follow-up from a primary care provider and/or specialist. Patients may also need to follow-up with consultants seen in the hospital, and you will help arrange this. Decide with your resident what medicines the patient will go home on. However, you are not allowed to do anything to the discharge document at all because physicians need to receive training to do so, and errors in the discharge document can result in adverse patient events. If a medical student creates or edits a discharge document, doing so is grounds for disciplinary action.

**Call Schedule**

The call schedules of the various services are constantly in flux, but you will be provided with accurate information at the start of your clerkship, and the clerkship directors are always available if you have questions. Generally speaking, you are expected to follow the schedule of your team, with the exception being that your resident and/or intern may stay overnight and you will not. Overnight call is no longer a required part of this rotation and you should NOT be staying overnight. Always look to the senior resident on your team for direction regarding when to show up and how late to stay.

If you are on a **sub-specialty service** (HUP: Solid Oncology, Cardiology, GI, Heart Failure, Pulmonary, or ID; PAH: Cardiology, Oncology; PPMC: ICU; VA: ICU) your team will be on call every day or every other day, and your daily hours will generally be from 7am to 6pm, but you may stay later if you are admitting a patient. However, the latest you should be staying is 9:00 pm on any service, which is tolerated if it happens once during 2-week block, but if it happens more frequently, you should contact one of the clerkship directors so adjustments can be made. The decision to stay after 6 PM should be based on the number of patients you currently have on your census and the number of new patients you have admitted during your rotation (i.e. if the admissions have been “few and far between,” you may want to take one while you have the opportunity even if it means staying a little later).

If you are on a **general medicine** service (PPMC ACE Unit and general services at the VA, PPMC, and PAH), your admissions will be on a 4-day cycle. Most admissions will be accepted on long-
call days (day 1) when the team is in the hospital the longest. You can stay from 7 am to 9 pm, but you may be able to leave before 9 pm when you have admitted a patient or two and your work is done. Post-call days (day 2), you will leave by 3 pm (unless there is mandatory teaching such as didactics, simulation, or physical exam rounds). No patients will be admitted on this day. On short-call days (day 3), you will generally stay from 7 am to 6 pm, and the team accepts some patients in the morning on this day. On “good days” (day 4), no patients are admitted and the team can leave when work is complete.

If you are on the Martin service (general medicine service at HUP), your admissions will be distributed throughout a 6-day call cycle. Since the call schedule is a little confusing, you will receive a thorough explanation of the schedule from either Dr. Bennett or Dr. Hamilton during orientation. Most admissions occur on day #1 (long call days). You can stay from 7am to 9pm, but you may be able to leave before 9pm if you have admitted a patient and your work is done. On post-call days (day 2), you should leave by 3pm. Days 3 and 4 are both short-call days, which means you will pick up a few patients either in nightfloat patients (for day 3) or short-call patients (day 4). You will generally work from 7am to 6pm on days 3 and 4. Day 5 is a good day. You will not be admitting any patients on day 5 and will typically work from 7am to 6pm. Day 6 is another short-call day. You will pick up nightfloat patients in the morning. You are scheduled to work from 7am to 6pm. All times listed are rough estimates. You can usually leave earlier if the work is complete. Just make sure to check in with your team before leaving.

If you are on Cardiology at PPMC, or VA general medicine, your admissions will be on a 3-day cycle. Most admissions will be accepted on long-call days (day 1). Post-call days (day 2), you will leave by 5 PM, sometimes earlier. Patients can also be admitted on short-call days (day 3).

What to Wear
On non-call days, women should wear pants/skirt, closed toe shoes, and a shirt/sweater. Men should wear a shirt and tie. It’s best to be on the conservative side, even if other team members aren’t. When you are on call, or if you are in the hospital on a weekend day, you can wear scrubs if your team wears scrubs. You should discuss whether or not you should wear scrubs before your first call/weekend day. You should wear your white coat and ID every day.

What to Put in Your White Coat

- Stethoscope
- Reflex Hammer
- Pen light
- More than one pen, because someone will steal yours and you have to be nice about that
- Pocket Medicine (very helpful for Medicine!)
- Some system of notes about your patients, either on the daily signout from Sunrise or your own notecard system
- SNACKS!
Grading/Assignments
The rotation is graded honors/high pass/pass/fail. The exam is a shelf. Your final grade will be a combination of your shelf score (25%), evaluations from all of your residents and attendings (30% from each of the two four-week blocks), completion of required videos (5%), the EKG quiz (5%), and 3 patient write-ups you will submit to a small group preceptor (5%). Your shelf exam grade is important (there is a minimum score of 76% required to obtain an Honors grade in this clerkship), but your evaluations are VERY important. If you do an outstanding job with your clinical responsibilities, and this is reflected in your evaluations, you will most likely do well in the course. You will also have a series of assignments over the course of the rotation, including three formal, typed patient write-ups as above. For an example of a formal medicine write-up done by an AOA student, see the Sample Patient Write-Ups section.

Tips for Studying for the Shelf
The biggest problem with the medicine shelf is finding time to study for it. Try to use your patients’ cases as learning examples for large blocks of information and use downtime in the hospital to study. Decide which resources you’re going to use to study (see later sections of this guide), and then make a planned reading schedule starting the first week—it is really hard to cover all the material if you don’t stick to a schedule. You will need to study on most of your days off, so make sure to leave some time on those days to do work. Especially if it’s your first shelf, do as many practice questions as possible, as half the battle is learning to do the questions. (More on this in the later section, but most folks find the USMLEWorld questions to be the most representative of the shelf.) Students that do well on the shelf exam have done a lot of questions to supplement their reading throughout the clerkship. Time is an issue during the exam, so practice doing the questions quickly and efficiently (you will want to do timed sets of questions to get yourself ready).

Tips for Succeeding
• Be enthusiastic and always helpful, and remember that your team will help you if you help them.
• This is one of the more demanding clerkships, but hopefully you will find the opportunities for learning and patient interaction to be some of the more satisfying. It can be difficult to spend long hours in the hospital, but do your best to remain positive and a team-player throughout the clerkship. Often, your work ethic and team spirit are what stands out to the people grading you - more than your clinical acumen or fund of knowledge.
• Know your patients well. You will not know everything about their medical issues, but if you know the answers to questions such as where the patient lives, his/her family history, his/her baseline hemoglobin, etc., your team will know that you care and that you’re on top of your patients’ care.
• For that matter, GET to know your patients well. You have more time than anyone else on the team, and your patients are stuck in the hospital and could really use some friendly med student attention. If you have a good relationship with your patients, you will enjoy the rotation more, and you will provide an important service to the team.
• Topic presentations do not need to include PowerPoint (in fact, you will probably look like an unpleasant gunner if you even touch PowerPoint). If you haven’t been asked to give a topic presentation by the end of your second week, mention it to your resident or attending to see if there is an appropriate time for you to talk to the team for 5-10 minutes. This provides a time for you to show off your knowledge.
• Get frequent feedback on your performance from your residents and attendings.
• Follow-up on questions. If you are asked a question that you don’t know the answer to, admit that you don’t know it and be sure to read up on it for next time – some attendings will ask the same question the next day to see if you looked it up!
• If there is another med student on your team, treat him or her as a colleague. This person’s smiling face will be very nice to see during attending rounds each day. We all like to think that we are simply outstanding on our own, but the truth is that an attending is much more likely to remember how great the “med students” on a rotation were than to recall that you knew an answer that your colleague didn’t. Making each other look good will definitely be good for both of you in the end!
  o On a side note, if it becomes difficult to collaborate with your fellow medical student on something (e.g. they want to get in at 5 am every day to pre-round and you find that excessive), try not to let it stress you out too much. You are separate people and your residents and attendings will understand that different people have different ways of accomplishing the day’s tasks.
• Check your e-mail frequently, as room assignments or times for teaching sessions often change—and you want to make sure not to miss any of these.
• Keep up with your patient logs and evaluation cards. Otherwise, you will be scrambling at the end and may get overwhelmed and/or look disorganized.
• Smile, be nice to everyone (clerks, nurses, consulting teams, etc.), and have fun.

What Not to Do
• Never act uninterested to attendings or residents.
• Never keep information from your team that you plan to mention on rounds. You should always report first to your intern/JAR/SAR, and then to your attending. Outside of rounds, you will probably not interact with your attending much, but your resident will. So that the patients are well cared for, your resident needs to have access to all information.
• Never go behind your intern’s back to give a patient information, examine a patient, etc. Be a team player and check in with him or her first. If you feel that you need or want more autonomy, just ask for it.
• Never, never, never give a presentation on another medical student’s topic/patient. Your team will notice, and they won’t like you if you do this. Along the same lines, don’t jump in and answer a question posed to someone else, even if you did just read about it and know the answer by heart.
• Don’t disappear. It’s fine to sit and study in a quiet area if you have some free time, but make sure your team knows where you are and that your phone is on. Otherwise, you may miss out on patient care opportunities and you’ll look like you don’t care.
What students remembered...

“...When I had the chance to work with one of the best, most caring physicians that I encountered in medical school, following him from his solitary private practice to the hospital several times each day, where he cared for his patients’ both acute and chronic concerns and addressed their needs completely.”

“...When I got the chance to bring the son of my patient with dementia into the room, and ask him about how he was doing as a caregiver and what we could do for him. He told me no one had ever asked him that before.”

“...When one of my patients told me I was the first person he felt comfortable asking for help since he had started thinking about hurting himself.”

Rotation Structure
During your month of family medicine, you will be at a site with anywhere from 0-4 other medical students. Although some of the physicians with whom you work will have an inpatient service, you will be working mainly in the outpatient setting. You will be seeing patients presenting for routine check-ups and screening, well-child visits, ob/gyn concerns, chronic disease visits, sick visits, injuries, psychiatric concerns, and everything else you can think of. Depending on your site, you may have formal teaching sessions each day or on specific days during the week.

Responsibilities
- **Seeing Patients:** In the beginning of your rotation, you may shadow a resident or an attending; however, at most sites you will quickly start to see patients on your own. You will be given their chief complaint and should focus your history on this complaint; however, remember that family medicine is all about preventive care, and so you should not forget the rest of your history either and should do a pertinent physical exam. The exception to this is an “acute” clinic that some practices have. In these cases, your resident or attending may not want to hear an entire presentation.

- **Presenting:** After you see your patient, you will be expected to present him or her to your attending, resident, or both. This type of presentation is different from those on inpatient medicine in that it is done immediately after you see the patient. You are thus not expected to know every answer about the patient’s needs or to have expertise on their complaints. You should try to get comfortable presenting, know everything you can about your patient, and try to find time before presenting to organize your thoughts regarding possible interventions (though sometimes you will have only a minute or two, if that). Keep it brief and focused, and use the opportunity to practice presenting without detailed notes or planning.
It can, at first, be overwhelming to have to do a full presentation with little preparation. Do your best, and don’t forget the principles that hold for all good presentations: be as focused as possible during the HPI, present the exam fluidly, make use of an “assessment” sentence, and try to put your money down during the plan. Even if the visit is just a checkup and the patient has no acute complaints, your plan can be along the lines of “continue all current medications, counseled on pertinent issues, refer for colonoscopy screening, and follow up again in 3-6 months”, etc. This is better than, “everything is fine, no active issues.”

- **Charting**: Depending on your site, you may or may not be allowed to write in the patient’s chart. You should ask about this on your first day. If you are told not to, you may want to take notes on an extra sheet while you interview the patient so that you can refer to these when you present.

**Schedule**

On your first day, you should ask what time to report in the morning. You will usually be done seeing your patients between 4 and 6pm, and you will have no on-call or weekend responsibilities. You will have required didactics on campus every Friday (usually all day), and you will lose points if you miss any, except in the case of extenuating circumstances.

**What to Wear**

Women should wear pants/skirt and a nice shirt or sweater with closed toe shoes. Men should wear a shirt and tie. As usual, be conservative; bring the white coat on the first day and ask your supervising attending about whether to wear it.

**What to Put in Your White Coat**

- Stethoscope
- Pocket Medicine
- More than one pen
- Pen light
- Reflex hammer
- Pregnancy wheel (if your site sees OB patients)
- Optional: tongue depressors, sterile gauze, sterile gloves, cotton swabs, band aids, stickers for kids.

**Grading**

The breakdown of grading is as follows: 55% of the grade is from the site evaluations, 35% from the exam, and 10% attendance and participation in didactics. The exam that you will take at the end of the block is not a shelf exam, but is a multiple choice exam which comes from the online cases that you are expected to work through during the clerkship. Most successful students take their time going through the online MedU cases, including reading them thoroughly and taking notes from the questions and PDFs that summarize the case. These are your best source of information from which to study. Be advised – do not blow off this shelf! It tends to be a detailed-oriented exam and should be taken seriously. There is also a
standardized patient portion of the exam where you will demonstrate a joint exam (usually the shoulder exam). You are advised to study for the exam—don’t make the assumption that preparing for the medicine shelf will prepare you for the family medicine exam (people have failed this way in the past).

**Tips for Succeeding**
- Be enthusiastic and friendly. As is true in every rotation, these qualities are invaluable.
- Remember that you are working in a very busy office and that the faculty has invited you to learn there. On occasion, things may need to move quickly and you may not be given the opportunity to see your patient on your own or to give a full presentation. Just go with it and shadow your attending if necessary.
- Be courteous and respectful to EVERYONE in the office.
- If you have a smartphone/iPad, put a couple of valuable programs on it before you start: Epocrates, ePSS (super helpful for preventive medicine and screening schedules), an antibiotic guide of some kind, and a guide to pediatric vaccination schedules. If you don’t have one (or don’t like using it), keep a medication guide and a pediatric vaccination schedule in your pocket. Being able to look things up quickly will make you a superstar.
- Don’t forget to take advantage of the extra time to study for the medicine shelf, but at the same time, don’t neglect studying for the family medicine shelf. It is essential that you study during family med no matter when in the sequence you have it; you will not get this time back when you are on inpatient medicine.

**Things Not to Do**
- As usual: never backstab anyone, never act bored, never make jokes or act disrespectfully about a patient.
- Never ask to leave before you and/or your attending have seen every patient on the schedule. If you have a valid reason to leave early, just mention it early in the day or week – for the most part, attendings are very understanding.
- Don’t be late for office hours. If you are at a distance site and get caught up in traffic they will understand once, but be sure to leave plenty of time to get to your site.
•♦ Pediatrics/Obstetrics and Gynecology ♦•

The 12-week block is divided equally between Ob/Gyn and Peds. Each individual discipline will have its own teaching curriculum with didactic sessions and problem-based learning.

{ Pediatrics }

What students remembered...

“...When each and every chubby 4-month-old baby smiled and giggled at me because they were just-that-happy-to-enjoy-all-the-everyday-life-moments (also just known as normal, happy baby syndrome.)”

“...When I realized that the mother of a very sick baby, who would certainly have severe physical and cognitive deficits, was essentially living the effective death of the child she had imagined she would have. It was an overwhelming sense of being called to do everything I could do to help her, the mother, emotionally and spiritually.”

“...When I comforted the worried mother of a child with a severe congenital malformation. I found out later that the mother was a famous musician, but in the hospital, she was like every mother of a sick child.”

“...When I had the opportunity to spend 3 hours with a family while we talked through treatment for Kawasaki’s disease. The family was angry and apprehensive about the medication but because I was the medical student, I had the time to sit with them and explain the medications.”

“...CHOCOLATE MILK. There are many moving moments in pediatrics. But there is also a lot of free chocolate milk and peanut butter crackers.”

“...When I got to exam/play with adorable infants at their well-child visits.”

“...When my patient got diagnosed with a very rare (but thankfully treatable) disease, and I had the time to sit down and walk the family through what it meant after the busy specialists left. I was able to break it down for them, walk them through the scans, and make this big scary thing seem a little more manageable.”

Introduction
Pediatrics is a 6-week course in which you will learn diagnosis and treatment of common childhood diseases. You will spend 3 weeks on one of the inpatient general pediatrics services at CHOP and 3 weeks in an outpatient pediatrics practice. This is a fun, though busy, rotation that most people enjoy, even if they are not planning a career in pediatrics.
Outpatient

On your 3 weeks of outpatient, you’ll be in clinic Monday – Thursday (Fridays are for didactics at CHOP). Your experience will vary depending on your site. At most practices you will have the opportunity to see both routine check-ups and sick visits—you usually see 2-5 patients per half day. You will perform histories and physical exams and present your assessment and plan to the attending physician. You may be expected to write progress notes for each visit, depending on the site. You will also likely have the opportunity to assist with immunizations, hearing screens, visual testing, and other routine health checks. Some students may have the opportunity to spend a week in the Well Baby Nursery (depending on site). A key to being successful is being friendly to everyone in the practice, including the receptionists, clerks, and nurses. These are all private, out-patient sites that volunteer their time and skills to your learning (they do not get compensated for teaching medical students!)! Make sure to thank and try to incorporate yourself into the team without being a burden to the efficiency of the practice.

Inpatient

The Team

You will be a member of one of the general floor services. Each service covers two types of patients—half general pediatrics or adolescent medicine and half subspecialty patients (either neuro, heme, pulmonary, renal, gastrointestinal, integrated care service-general pediatrics complex care service). This means you will have two different attendings who will round separately in the morning. The team includes:

- 1-2 medical students
- 0-1 externs (3rd or 4th yr med students doing an advanced rotation)
- 3-4 interns (1st yr residents): these will be the people you work most closely with. You will share patients with the interns. They are usually really tired so they definitely appreciate your help in any way (tracking down lab values, calling primary care docs, etc.). **Unlike other rotations, interns on Pediatrics will also have a role in your evaluation.**
- 2 senior residents (2nd or 3rd yr residents): the senior residents have a supervisory role on the team. They will often do a lot of teaching for the medical students.
- Fellow for the subspecialty services
- Attendings: one general pediatrics + one specialist

The only exception to the above description of the team is the MHT/7W team. This is the Medical Hospitalist Team, an **attending only service** which covers General Pediatrics Patients. The team is a “first fill” team, so it tends to be busy and has high turnover. As there are no residents, the attendings do a lot of teaching for the medical students.
Other people you will interact with:

- Teaching senior: a 3rd year resident whose entire role is to teach the med students on the team. He/she will lead special weekly didactic sessions during the inpatient rotation, as well as grade your write-ups.

Chain of command

Depending on the time of year you will be rotating in Pediatrics, it will be important to come up with your own assessment and plan before seeking guidance from your interns and residents. That said, as any issues arise with your patients, go to your intern first. If you find out something new on your patient, make sure to share it with the intern. Even though it is “your patient”, the intern is ultimately responsible, so never do anything behind his/her back. If the intern deems it necessary, he/she will go to the resident or attending to ask for help. As a 200 student, you will rarely call the attending directly with patient issues, but during rounds you should feel free to discuss your ideas with the attending. As most Peds floors include both a general pediatrics service and a specialty service, you will likely have a different attending for each service at one time. These attendings will change every 1-2 weeks.

Schedule

- 6:30: interns get sign-out from the on-call intern at 6:30 am. You should be there so you know what happened with your patients overnight.
- 6:30-7:30: pre-round on all of your patients (including patients you admitted the night before if you were on call). Usually, this means looking on PennChart (the electronic medical record) to check each patient’s vital signs from overnight. This also means talking with the nurses and the on-call resident about any overnight events. Then, see all of your patients and perform a focused physical exam. Returning to the electronic medical record, continue to look up any new lab results and radiology studies. Check for notes from any consultations you may have called. Then, write your SOAP notes for each of your patients in the PennChart system. Some teams prefer that you print out your SOAP notes to present before rounds begin. Some will allow you to use the computer to present on rounds.
- 7:30-10:30: rounds with the attending. You will present updates on all of your patients. If you admitted a new patient the day/night before, you will give a detailed presentation including HPI, PMH, birth history, developmental history, pertinent ROS, physical exam, and diagnostic studies. The most important part of your presentation is the assessment and plan where you will summarize the patient and give your differential diagnosis and plan for further management (you will get much better at this as the year progresses, but make sure that you double check the A/P with your intern or resident before attending rounds). When time allows, your attending or resident will often give a lecture on a pertinent topic or bring in articles for review.
- 10:30-11: morning report, primarily geared towards senior residents, you are invited to attend if you wish to go and do not have tasks related to your patients to attend to.
- 11-12: use this time to call any consults (check with your intern before calling consults), order tests, follow-up on anything you discussed during rounds.
• 12-1: noon conference with all of the interns and med students
• 1-4: work on the floor or didactic sessions
• 4-5: interns sign out to intern on call. You should be present if possible, although if the day is slow, often interns and residents will send you home early. Make sure to check in with the senior resident before you leave for the day, even if the intern dismisses you home.

**What to wear**
Women: Nice pants and a top/sweater or a knee-length dress, closed toed shoes. No short skirts or bare midriffs.
Men: Nice pants and dress shirt. Many male residents/attendings at CHOP do not wear ties. We suggest wearing a tie the first day and then assessing the situation on your service. **White coats are not generally worn in CHOP.** You may be able to wear scrubs on your weekend call, but check with your intern first!

**What to put in your white coat (or carry with you)**
• Stethoscope
• Pocket pharmacopeia/Epocrates (can also use your iPhone or iPad application)
• Pocket antibiotic guide (can also use your iPhone or iPad application)
• Pocket Medicine (less applicable to Peds than Medicine, but you may still use it)
• Otoscope and tips (Otoscopes are often hard to come by on the floor, so if you have one, make sure to bring it. If you don’t have one, don’t worry about buying one. Most people don’t have one.)
• Pens (always have an extra on hand!)
• Notecards/paper (you should keep all of your patients’ lab values close at hand)
• Penlight
• Optional: Gauze, tongue depressors, bandaids, **stickers (a huge hit!)**
• A table listing normal vitals for each age group—it can be hard to keep track of what’s normal for kids! These are provided for you in orientation or can be found in Harriet Lane.

**Call**
You will take call 4-5 times over the course of your rotation with two calls being on Saturday and Sunday. During call, you will pick up a new admission or two and leave the hospital by 10 PM. However, if you are there on a slow night, your resident may send you home early, and you can instead pick up a new patient on a non-call day during the day. **Note: do not ask to leave if it’s a slow night; wait for the senior resident to send you home.**

**How to “Pick Up” Patients**
On pediatrics, all interns admit new patients on all days (on other rotations, like medicine, interns only admit when they are on call). So it is possible that you could “pick up” a new patient any day. However, usually you will pick up new patients when you take call. Generally you will carry around 2 patients on peds (and you may start with 1 for the first few days if you take Peds early in the year). That way you can have an in-depth knowledge of all of your
patients. Your residents will usually make sure you have enough patients to follow. However, if you don’t feel like you have enough patients, ask the senior residents if there are other interesting patients you can follow—residents like students who take initiative and don’t wait for work to be given to them. Whenever possible, it’s a good idea to make sure to pick up a mix of general peds and specialty patients, with an emphasis on the general peds patients. This way, you will get exposure to more of the “bread-and-butter” peds cases. It is ok to pick up patients that are admitted overnight (many of the admissions occur then).

**Assignments**
You will have to write 1 detailed history and physical write-ups during your inpatient rotation, which is 5% of your grade. There is an option to complete a second write-up to improve your grade. See the “Sample Patient Write-Ups” at the end of this book for an example. Students also have to give case presentations to their classmates (5%), and complete a patient safety assignment (5%). Students will also participate in simulation sessions focusing on pediatric emergencies.

**Didactics**
You will have Friday didactic sessions on both inpatient and outpatient peds that start around 10:30. Inpatient students are expected to attend rounds first. On inpatient, you will also have didactic sessions during the week.

**Books**
See the book guide at the back for detailed recommendations.

**Grading**
The rotation is graded honors/high pass/pass/fail. The exam is a shelf. Your final grade will be a combination of your shelf score (25%), evaluations from your inpatient (30%) and outpatient (30%) rotations, your write-ups (5%), a case conference presentation (5%), patient safety assignment (5%) and professionalism/participation. The shelf cut-off for honors is **tentatively** determined by the mean of the previous year’s score.

**Tips for the Pediatric Presentation**
- Don’t forget about birth history and developmental history (especially for younger children).
- Don’t forget about feeding and voiding (pediatricians are more interested in diet and stooling than the average physician!).
- Know your patient’s weight—everything is weight-based in peds.
- Make sure to keep a vaccine schedule handy so that you know what vaccines your patient should have had, particularly in the outpatient setting.
- Input/Output—you usually describe a child’s I’s and O’s based on their weight (mL/kg/day IN and mL/kg/hour OUT).
- Don’t leave out the SHADSSS/HEADSS assessment for adolescents.
Tips for Studying for the Shelf
The peds shelf is one of the most challenging shelf exams as the rotation is only 6 weeks, and thus, you are required to learn an extraordinary amount of information in a very short period of time. It is imperative to begin studying for this shelf early (especially if this is your first shelf) and to do a lot of practice questions. Like other standardized tests you’ve taken (like the MCAT), half the battle is just learning how to answer the questions. There are a lot of tricks to answering the questions that you will see repeated on every shelf. The shelf exams usually test detailed knowledge, especially in peds, so it is usually not enough to only know general principles or basics. The majority of your energy should be focused on the rotation itself as your course evaluations from both inpatient and outpatient make up a substantial portion of your peds grade. Since this is pediatrics, the responsibilities of the medical student at CHOP are somewhat limited, and thus, the shelf score and presentations may be more important for this rotation than others.

Tips for Succeeding

- **ENTHUSIASM** and **FRIENDLINESS** are key!
- Know what is going on with all of your patients at all times.
- Be prepared for rounds. It is the one time in the day when the attending will be paying attention solely to you. So prepare your assessments and plans before you get there. Feel free to consult your intern before rounds and ask for suggestions after you’ve come up with your own backbone for an assessment and plan.
- When presenting your patients on rounds, stick to the **pertinent** information. You don’t need to give a detailed neurologic exam every day you present a patient who is admitted for asthma.
- Make sure to talk with parents as well as the children.
- **Once or twice** during the rotation, bring in an article or prepare a brief presentation on a pertinent topic. Always inform your fellow students the day before about what you will be talking about so they can read up on the subject. An attending (or sometimes a resident) may assign or suggest topics and/or days for you to present, but sometimes you can pick your own topics/days. Ask a resident if you’re not sure what to do about the presentation by the middle of the rotation.
- Help out your interns in any way you can. Always ask if there is anything else you can do before you leave for the day. As always, it’s better to be specific and say “I can do X job” rather than asking “is there anything else I can do?”
- Read about your patients’ issues. Good resources are UpToDate and eMedicine, as well as your pediatrics books.
- Ask for feedback half-way through the rotation. It is often intimidating to approach your residents and attendings to get constructive criticism, but it is an important part of being a successful student. Most pediatricians are really nice, so it makes them easier to approach. However, they may shy away from giving criticisms to your face. To avoid this, asking specific questions are key! Some examples: Was my assessment accurate—how could I make the presentation more focused, was there unnecessary information...
Some people think they have done a great job and then are surprised when they read their evaluations.

• Remember you are a student, and you are there to learn. You are not expected to know the answer to every question, so it is ok to say “I don’t know” if you really have no idea. But you should go home that night and learn about the issue so if you are ever asked again, you will know the answer.

• CHOP is one of the premiere children’s hospitals in the world. You will see things on the ward that only 10 or so people have ever been diagnosed with. DON’T get bogged down with these details or making the diagnosis – focusing on ‘bread and butter’ peds will serve you better for the shelf.

What Not to Do
• Back stab your fellow students (i.e. bring in a presentation on a condition one of their patients has). It is obvious to all team members and is really looked down upon.

{ Obstetrics & Gynecology }

What students remembered...

“Each time I saw the look on the face of a new mom when she heard her baby’s heart beat for the first time.”

“...When I had the privilege and pain of comforting my patient as she was diagnosed with uterine cancer.”

“...When a beautiful family told me they will remember me always after I delivered their gorgeous baby boy and gave me a vote in choosing his name!”

“...When I watched a woman struggle through hours of labor to deliver her first child, with nothing but pure determination on her face. And then I watched all that stoicism melt away when the baby boy was suddenly placed on her chest. She let out a surprised “oh!” and started crying some very happy tears.”

“...When I saw the look on an 18 year old’s face in recovery after we removed a 50 cm ovarian cyst.”

OB/Gyn is a 6-week rotation where you will have experiences in delivering babies, working in obstetric and gynecology clinics and assisting in gynecologic surgeries.

The Team
• Interns: first year residents who are responsible for the majority of the daily work on all of the inpatients.
• *Residents*: generally have a more supervisory role and spend more time in the operating room and on advanced rotations. Third years and chiefs (fourth year residents) generally take the most active teaching roles. Do not expect second years to teach as much—they are the busiest of all.

• *Fellows*: depending on your site, you may have fellows in Gyn Oncology, Reproductive Endocrine and Infertility, Family Planning, Urogyn and Maternal-Fetal Medicine (high risk OB).

• *Attendings*: At some locations you will work with private attendings, who are doctors in the community who admit patients at that hospital.

**Sites**
For this rotation, students will be placed at HUP, Pennsylvania Hospital, and Lancaster General Hospital.

**Schedule**
The schedule varies greatly depending on your site and your rotation. In general, you will spend two weeks on labor and delivery (one week of days and one week of nights), one week on a surgical service, one week with a subspecialty of your choice, one week in clinic, and one week on “Learning Week” where you attend conferences, lectures, meetings and have extra time to study.

Didactics for this rotation are the first Monday, second Friday, and last Wednesday and Thursday of the rotation. If you are at Pennsylvania hospital, you will also have Wednesday morning didactic sessions with Dr. Ronner (“Waffles with Wanda”). Most sites also have daily or weekly conferences (Grand Rounds, resident didactics, etc) that you will attend.

**Breakdown of the rotation**
At most sites, you will spend approximately 2 weeks on each on the following rotations:

• **Labor and Delivery**: This is the fun and exciting part of OB for most students. During this rotation you will be expected to assist in vaginal deliveries as well as C-sections. You will follow the progress of laboring patients by doing frequent cervical checks (or more likely accompanying a resident who will do the checks), reviewing maternal vital signs and fetal heart tracings, and writing progress notes. You will assist the attending and/or resident in the actual delivery (you will often be in charge of delivering the placenta, but will hopefully get to deliver some babies as well) and then might write the delivery note. Maxwell’s has a good outline of a delivery note, but you can also find an outline in the introduction section of this book. To prepare for your first day, **read about normal labor**—know the stages, how long is normal for each stage, etc. Some other **potential pimping topics**: pre-term labor, pre-eclampsia/HELLP syndrome, placental abnormalities (abruption, previa, etc.), signs of placental separation, post-partum hemorrhage, grading of vaginal/perineal tears.
• **Clinic**: You will see pregnant patients who are coming in for routine checks as well as gynecology patients who are coming in for yearly pelvic exams or acute visits. Generally you will see the patient first, perform a history and general physical exam, and then present your assessment and plan to the resident or attending. You should not do the pelvic exam without supervision by a resident, nurse, or attending. In some clinics, you may spend more time shadowing attendings or residents. **Potential pimping topics**: size of uterus at various gestational ages, grading of gestational diabetes, mammogram guidelines, Pap smear guidelines/pathology grading, diagnosis of PID, diagnosis of pre-eclampsia, amenorrhea, etc.

• **Gyn Surgery**: This rotation is similar to your surgery rotation. You will assist in surgeries like hysterectomies, and tubal ligations, as well as oncology cases (at some sites, there is the possibility of being assigned to the Gyn Onc service, in which case you will only see oncology cases). Your resident will probably tell you which cases you should “scrub in” on but if s/he doesn’t, ask the senior resident. Like on general surgery, you will be an extra pair of hands in the OR. You may be asked to prep the patient or assist the attending and resident in any way they need. If this is your first rotation and you have not done surgery yet, be sure to let your resident know. She or he will teach you how to scrub in, prep the patient, staple, and tie sutures. Sterile technique and scrubbing will also be reviewed during orientation on the first day of the course, and you will have a chance to participate in simulation sessions for Foley insertion and suturing during the first week of the rotation. Try to read about each patient’s problems and planned surgery prior to going to the OR. At some sites, you may also pre-round on pre-op or post-op patients and participate in rounds. **Potential pimping topics**: pelvic anatomy (make sure you know the vessels and the ligaments they run in), complications of various surgeries, cancer staging/treatments/etc.

**Call**
Call varies depending on your site. You will likely work 1-2 weekends on this rotation. If you are at Pennsylvania Hospital, you will be required to do one week of nights on L&D, which often includes 1-2 weekend evenings.

**What to Wear**
Scrubs on L+D and surgery. For clinic, standard business casual with closed toed shoes is appropriate.

**Books**

**Additional Assignments**
You will be asked to submit an H&P and Evidence Based Medicine report online. In addition, you will be asked to comment on 2 other student H&Ps as well as 2 other student EBM exercises. These assignments are due the third week (H&P) and fifth week (EBM) of the rotation, respectively.
Grading
The rotation is graded honors/high pass/pass/fail. The exam is a shelf. Your final grade will be a combination of your shelf score and evaluations from all of your residents and attendings, as well as your H&P and EBM evaluations.

Tips for Studying for the Shelf
General tips for success on the shelf are to start reading early in the rotation and do a lot of practice questions. You will have access to an online tool called UWISE, which is a bank of practice questions with immediate feedback about correct answers as well as practice tests. You should try to answer as many of these Uwise questions as you can. The shelf cutoff for honors is set at the average shelf score from the last year of students (usually 80-83 range).

What to put in your white coat
- Stethoscope
- Pregnancy wheel (for determining estimated delivery dates)
- Penlight
- Reflex hammer (the neurological exam is important in pregnant and/or laboring patients)
- Pens
- Notecards/paper
- Optional: Maxwell’s cards (have a great outline of a postpartum note, etc.), tape measure to measure size of gravid uterus during prenatal visits, “Obstetrics, Gynecology, and Infertility” (a red pocket book—definitely not necessary, but a great quick reference for most everything you’ll see).

Tips for Succeeding
- Like all rotations, enthusiasm, teamwork, and initiative go very far. The residents are very busy and may not go out of their way to include you, so try to anticipate how you can be helpful ahead of time. Try to offer to do specific things (like “I’ll check her labs and write them in the chart” or “I can prep the patient if it would be helpful” or “Can I grab gloves for you?”).
- Be respectful of your patients. Before you jump in on a delivery, you should get to know the patient by going in throughout her labor, and talking to her and her family. It’s not fair to only do the delivery without putting in the time first. How would you feel if you had been laboring for 10 hours and then just as you’re are about to deliver, some med student who hasn’t even introduced her/himself jumps in and pulls out your baby???
- Don’t be nervous about doing a pelvic exam—you will have another standardized patient experience on the first day of the rotation to refresh your skills. And don’t turn down a chance to do a speculum exam or cervical check—even if you don’t feel totally comfortable, the only way you will get better is by practicing. You will have to do pelvic exams outside of this rotation (in the ED, in Family Medicine, in Peds if you have adolescents, etc.), so it’s important to get the practice when you have the chance!
- Be on time and keep your presentations succinct.
• Have fun! Delivering babies is a truly wonderful experience that unless you go into OB, you will likely never have after this rotation, so enjoy.
• Remember you are a student, and you are there to learn. You are not expected to know the answer to every question, but you should always look up the answer to things you don’t know in case the same issue comes up again.

What Not to Do
• Act uninterested or insulting to residents and attendings.
• Perform a pelvic exam on your own—the rules will vary depending on the site, but at most places you will need to be accompanied by a nurse or a resident (or at least a medical assistant).
• Sit around reading on a busy floor—if the residents are busy, you should try to be busy too. This can be really difficult, particularly on L&D, but if there’s nothing going on on the floor, check out the PETU/PEEC.
• Swoop in and take a delivery of a patient that another student has been following.

Common OB/GYN Abbreviations

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<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AC</td>
<td>Abdominal circumference</td>
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<tr>
<td>AFI</td>
<td>Amniotic fluid index</td>
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<td>AFP</td>
<td>Alfa fetoprotein</td>
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<tr>
<td>AMA</td>
<td>Advanced maternal age</td>
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<tr>
<td>AROM</td>
<td>Artificial rupture of membranes</td>
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<tr>
<td>Bbow</td>
<td>Bulging bag of water</td>
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<tr>
<td>BCP</td>
<td>Birth control pills</td>
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<tr>
<td>BOWI</td>
<td>Bag of water intact</td>
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<tr>
<td>BPD</td>
<td>Biarietal diameter</td>
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<tr>
<td>BSO</td>
<td>Bilateral salpingoophorectomy</td>
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<tr>
<td>BTL</td>
<td>Bilateral tubal lization</td>
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<tr>
<td>CD</td>
<td>Caesarian delivery</td>
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<td>C/S</td>
<td>Caesarian section</td>
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<td>CST</td>
<td>Contraction stress test</td>
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<tr>
<td>Cx</td>
<td>Cervix</td>
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<tr>
<td>D&amp;C</td>
<td>Dilation and curettage</td>
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<tr>
<td>D&amp;E</td>
<td>Dilation and evacuation</td>
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<tr>
<td>DUB</td>
<td>Dysfunctional uterine bleeding</td>
</tr>
<tr>
<td>ECC</td>
<td>Endocervical curettage</td>
</tr>
<tr>
<td>EDC</td>
<td>Estimated date of confinement</td>
</tr>
<tr>
<td>EGA</td>
<td>Estimated gestational age</td>
</tr>
<tr>
<td>EMB</td>
<td>Endometrial biopsy</td>
</tr>
<tr>
<td>EP</td>
<td>Ectopic pregnancy</td>
</tr>
<tr>
<td>FH</td>
<td>Fundal height</td>
</tr>
<tr>
<td>FHR</td>
<td>Fetal heart rate</td>
</tr>
<tr>
<td>FHT</td>
<td>Fetal heart tones</td>
</tr>
<tr>
<td>FM</td>
<td>Fetal movements</td>
</tr>
<tr>
<td>FOB</td>
<td>Father of the baby</td>
</tr>
<tr>
<td>FSH</td>
<td>Follicle stimulating hormone</td>
</tr>
<tr>
<td>FTP</td>
<td>Failure to progress</td>
</tr>
<tr>
<td>GC</td>
<td>Gonococcus</td>
</tr>
<tr>
<td>H/C</td>
<td>Head circumference</td>
</tr>
<tr>
<td>HCG</td>
<td>Human chorionic gonadotropin</td>
</tr>
<tr>
<td>HPL</td>
<td>Human placental lactogen</td>
</tr>
<tr>
<td>LNMP</td>
<td>Last normal menstrual period</td>
</tr>
<tr>
<td>LOA</td>
<td>Left occiput anterior</td>
</tr>
<tr>
<td>LOF</td>
<td>Leakage/loss of fluid</td>
</tr>
<tr>
<td>LOP</td>
<td>Left occiput posterior</td>
</tr>
<tr>
<td>L/S</td>
<td>Lecithin / sphingomyelin ratio</td>
</tr>
<tr>
<td>LT C/S</td>
<td>Low transverse C section</td>
</tr>
<tr>
<td>OCP</td>
<td>Oral contraceptive pill</td>
</tr>
<tr>
<td>PID</td>
<td>Pelvic inflammatory disease</td>
</tr>
<tr>
<td>PIH</td>
<td>Pregnancy induced hypertension</td>
</tr>
<tr>
<td>PMDD</td>
<td>Premenstrual dysphoric disorder</td>
</tr>
<tr>
<td>PMS</td>
<td>Premenstrual syndrome</td>
</tr>
<tr>
<td>POC</td>
<td>Products of conception</td>
</tr>
<tr>
<td>PROM</td>
<td>Premature rupture of membranes</td>
</tr>
<tr>
<td>PTL</td>
<td>Preterm labor</td>
</tr>
<tr>
<td>RDS</td>
<td>Respiratory distress syndrome</td>
</tr>
<tr>
<td>ROA</td>
<td>Right occiput anterior</td>
</tr>
<tr>
<td>ROP</td>
<td>Right occiput posterior</td>
</tr>
<tr>
<td>SAB</td>
<td>Spontaneous abortion</td>
</tr>
<tr>
<td>SROM</td>
<td>Spontaneous rupture of membrane</td>
</tr>
<tr>
<td>STD</td>
<td>Sexually transmitted disease</td>
</tr>
<tr>
<td>SUI</td>
<td>Stress urinary incontinence</td>
</tr>
<tr>
<td>SVD</td>
<td>Spontaneous vaginal delivery</td>
</tr>
<tr>
<td>TAH</td>
<td>Total abdominal hysterectomy</td>
</tr>
<tr>
<td>TOA</td>
<td>Tubal ovarian abscess</td>
</tr>
<tr>
<td>TOL</td>
<td>Trial of labor</td>
</tr>
<tr>
<td>TVH</td>
<td>Total vaginal hysterectomy</td>
</tr>
<tr>
<td>UC</td>
<td>Uterine contraction</td>
</tr>
<tr>
<td>US</td>
<td>Ultrasound</td>
</tr>
<tr>
<td>VB</td>
<td>Vaginal bleeding</td>
</tr>
<tr>
<td>VBAC</td>
<td>Vaginal birth after C-section</td>
</tr>
<tr>
<td>VTX</td>
<td>Vertex</td>
</tr>
</tbody>
</table>

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Psych/Neuro/Emergency Medicine

This clinical block consists of 4 weeks of Psychiatry, 4 weeks of Neurology, and 4 weeks of EM. Both Psychiatry and Neurology end with an official shelf exam, and so these rotations will be fast-paced with only a short time to learn a lot of material. EM is demanding as well, and is a fun opportunity to learn how to determine the acuity of a patient’s presentation and how to present and act quickly.

{ Psychiatry }

What students remembered...

“...When I had hours just to talk with my medically and emotionally complex patients on HUP consult and had the chance to bond with a man who I ended up crossing paths with multiple times over the year as he went through the process of getting a liver transplant.”

“I spent an hour talking with my patient who was scared and wouldn’t let anyone draw his blood, even though it was medically very necessary, and we talked through everything he was worried about and made a list of how we would address each concern. Eventually, he then felt safe enough to let us draw his blood.”

“...When I could sit and listen to an elderly man with severe dementia and depression for as long as he needed to talk.”

“...When a very depressed elderly woman who was a retired librarian kept mentioning that she wished she had something to read while inpatient, and during a break I ran out and bought a few books from a nearby used bookstore for her. It was the first time I had seen her smile in days.”

Psychiatry will be a unique component of your clinical experience because it focuses on human thought and behavior, examining the psychological and social dimensions of illness. As a 200 student, you’ll become very familiar with the psychiatric history and complete mental status examination. You’ll be challenged to formulate a reasonable differential diagnosis based on the multiaxial diagnostic scheme of the DSM (The American Psychiatric Association’s Diagnostic and
Statistical Manual of Mental Disorders). You will also be involved in the application of psychopharmacological agents and non-somatic modalities of care. Regardless of whether or not psychiatry is your career field of choice, you will be expected to strengthen your interpersonal and interview skills and become aware of the psychological issues in medicine.

The Team
The patient care team will vary slightly depending on your site. In general, though, the structure is similar to that of an inpatient medicine team with a few extra members:

- **Interns**: First year residents responsible for the daily care of patients. Not all teams have an intern.
- **Residents**: May act as someone who oversees the intern, or may act alone without an intern. Regardless, is responsible for patient care and will be your primary contact person.
- **Attending**: Oversees all patient care on the ward.
- **Psychologist**: Most inpatient psych services also have a psychologist who will usually function as an attending – taking charge of a patient’s care and even overseeing the residents.

Sites
There are 5 options for sites at which to rotate for psychiatry. They are: Pennsy 4 Spruce (emphasis on psychotic disorders), Pennsy 6 Spruce (emphasis on mood disorders), HUP consult service, VA inpatient unit, and Presby 5 Wright inpatient unit (emphasis on dual diagnosis population). Students at all sites will spend 1 afternoon per week at the VA outpatient clinic.

Breakdown of the Rotation
Your psych experience will be similar to other rotations in that you will pick up new patients and follow their daily progress throughout the course of their admission to the hospital. In contrast to other services where patients present more acutely, during psych your team will often wait until the following morning to “admit” a patient (meaning interview them and discuss their diagnosis). This means that most afternoons on a psych service are more relaxed because you don’t have to worry about admitting new patients on top of your existing patient care tasks.

Each site has a different format and time at which rounds are held. Usually, you are expected to meet around 8:00 a.m. when the team will interview patients as a group. For new patients, one person on the team is expected to “pick up” the patient and interview him or her during rounds. The remaining patients are seen at the discretion of the attending. After rounds, you are expected to write admission notes for the new patients you are following. You are also expected to talk, spend time with, and get to know your other patients and write progress notes on them as well. Often there are group activities on the inpatient wards, and you may participate in these also. You will often be interviewing patients in front of your entire team, including other students and attendings. Students should become familiar with the Mental Status Exam as it replaces the physical exam component of the patient interview and note.
More specific requirements, such as write-ups and presentations will vary by institution and service.

**Call**
Call requirements for psych are 3 weekend nights and 1 weekend day. Call is spent at either the HUP or Pennsy emergency psychiatry units. You are expected to be at your call site around 5 pm and to stay until your supervising resident dismisses you for the night (usually between 7 and 9 pm). Unlike other rotations, there are opportunities to trade away your assigned call nights in exchange for participating in various enrichment activities. This policy will be thoroughly explained during clerkship orientation. These enrichment activities are usually very well received with students and include book club, going to a 12-step recovery meeting, and attending a weekly Narrative Medicine seminar.

**What to Wear**
You are expected to dress in business casual hospital attire and most sites also expect students to wear a white coat. Be extra careful about dressing professionally on psychiatry; remember that cleavage or flashy clothes might give the wrong signal to a confused, disinhibited, or manic patient.

**Grading/Exams**
Your grade in this course will be determined by:
- Clinical evaluations by attendings and residents you work with (60% of grade).
- Final write-up following a live patient interview (you will learn more about this during your orientation).
- Performance on the shelf exam (shelf plus other assignments add to 40% of grade, and you must score over the average on the shelf to be eligible for honors: in 2014, this cutoff was 86).

**Safety/Security**
Be sure to follow the guidelines of the inpatient wards. Do not put yourself in any potentially unsafe circumstances. During your first day of orientation, the course director will cover these issues with you. As a general rule, never put the patient between you and the door, never do anything that makes you feel uncomfortable, and always adhere to any guidelines that your residents and attendings create.

**A Helpful Hint**
One of the more challenging components of this rotation is the emotional burden of taking care of patients who struggle with helplessness, hopelessness or psychosis. Make sure to keep tabs on your own emotions and reactions during the rotation and do not hesitate to talk about this with your resident or attending.

**Mental Status Exam**
The psych H&P is similar to the general H&P, but it is important to pay extra attention to the past psych history, family psych history, drug and alcohol history, and social history. In lieu of a
physical exam, be sure to include the MSE. Note that this is different from the “mini-mental status exam,” which is a tool to assess one’s cognition and only comprises one part of the MSE.

Mnemonic for the MSE is **ABC STAMP LICK**
A = appearance  
B = behavior  
C = cooperation  
S = speech  
T = thought processes/thought content  
A = affect  
M = mood  
P = perception  
L = language  
I = insight/judgment  
C = cognition (mini-mental status exam)  
K = knowledge

**Appearance:** Include gender/race, actual/apparent age, general appearance, attire, grooming/hygiene, body habitus, physical abnormalities/assistive devices, jewelry, tattoos/body piercings, scars, unusual patterns of hair loss, etc.

**Behavior:** Include gestures, abnormal or idiosyncratic movements (akathisia, automatisms, catatonia, choreoathetoid movements, compulsions, dystonias, tardive dyskinesia, tics, tremors, etc.), facial expressions, eye contact or lack thereof, impulse control, and psychomotor agitation or retardation.

**Cooperation/reliability:** Pay attention to patients’ cooperation/attentiveness to the interview and their attitude/demeanor.

**Speech:** Note rate, quantity, quality (volume, rhythm), and form, as well as any difficulty speaking (i.e. dysarthria, etc.).

**Language:** Note any language disorders such as aphasia or anomia.

**Thought Process:** This is the form or structure of the patient’s thinking as opposed to the actual content. Normative is logical and goal directed. Impaired thought processes include looseness of associations, flight of ideas, word salad, thought blocking (sudden interruption of thought and speech), racing, etc.

**Thought Content:** This refers to the actual things the patient is thinking about. Includes delusions, suicidal/homicidal ideation, paranoia, somatic or religious pre-occupation, other obsessions, grandiosity, helplessness, ideas of reference, ideas of thought control or thought broadcasting, thought insertion, beliefs of unusual powers, phobias, fears, feelings of worthlessness or guilt, and feelings of being punished.
**Affect:** This is the externally visible emotional state that YOU observe: such as depressed, anxious, flat, constricted, blunt, hostile, angry, suspicious, guarded, euphoric, labile, irritable, appropriate, and inappropriate. Think in terms of range (number of emotions—narrow/restricted vs. wide/expanded), intensity, stability, reactivity (how much external factors influence emotional expression), appropriateness, and mood congruence.

**Mood:** Usually given in the patient’s own words. This is the internal emotional state that you believe to be present—may not match the patient’s affect.

**Perception:** How patient processes environment and perceives the world. Describe any auditory, visual, olfactory, or tactile hallucinations or illusions.

**Insight/judgment:** Is the patient aware that he/she has a problem? Will he/she accept treatment? Can he/she appropriately weigh consequences of doing or not doing something?

**Cognitive functioning/sensorium/knowledge:** Orientated to time, place, person? Examine faculties of abstraction, calculation, recall. Use Mini-Mental Status Exam, if indicated.

### Mini-Mental Status Exam

<table>
<thead>
<tr>
<th>Task</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time? (Year, season, month, day, date)</td>
<td>5 pts</td>
</tr>
<tr>
<td>Location? (State, county, town, hospital, floor)</td>
<td>5 pts</td>
</tr>
<tr>
<td>As the patient to repeat 3 objects and to remember them</td>
<td>3 pts</td>
</tr>
<tr>
<td>Serial 7’s or spell WORLD backwards</td>
<td>5 pts</td>
</tr>
<tr>
<td>Ask for the 3 objects named above</td>
<td>3 pts</td>
</tr>
<tr>
<td>Point to 2 objects and have the patient name them</td>
<td>2 pts</td>
</tr>
<tr>
<td>Repeat “No ifs, ands, or buts”</td>
<td>1 pt</td>
</tr>
<tr>
<td>Follow command: “Take the paper in your right hand, fold it in half and put it on the floor.”</td>
<td>3 pts</td>
</tr>
<tr>
<td>Read and obey the following written words: “CLOSE YOUR EYES”</td>
<td>1 pt</td>
</tr>
<tr>
<td>Write a sentence</td>
<td>1 pt</td>
</tr>
<tr>
<td>Copy a design</td>
<td>1 pt</td>
</tr>
</tbody>
</table>

### Neurology

What students remembered...

“...When a chronic neuropathic pain patient was so touched by the fact that I held her hand during a procedure that she asked the nurse to tell my resident to call me after I had left the rotation just to thank me.”
“...When an older woman came in with her husband and they bragged to me about all the fun things they were able to do now that her Parkinsons was under better control.”

“...When I could help an older gentleman come up with smoking cessation strategies after he suffered a minor stroke.”

The neurology block is a great opportunity to learn about the various major diseases involving the central and peripheral nervous system.

**Sites**
On the first day of the rotation, you will meet as a group with Dr. Pruitt and discuss which type of clinical experience you would like to have. Based on your interests, she will assign you to an inpatient site. Previous years, sites have included HUP consults, HUP Stroke, HUP Ward, Pennsy, Presby, CHOP. This year you will also be able to do half the rotation at one site and half at another. In addition to your time on the inpatient service, you will be assigned an outpatient clinic to attend once a week.

**Day to Day**
Didactics are held weekly on Thursday afternoons and cover much of the material you need for the shelf.

The inpatient experiences will be similar to your medicine rotation in that you will help admit, work up, manage, and follow specific patients throughout the course of their admission. On a consult service, you will see how neurologic issues may affect patients on other specialty services. Presentations and notes should follow the standard format, with the addition of a directed neurologic history, comprehensive neurologic exam, and underlying appreciation for relevant neuroanatomy.

The most important aspect of this course is to get comfortable performing a neurologic exam!

*Note for future pediatricians:* If you choose to do your rotation at CHOP, you may need to spend a little extra time mastering some of the adult neurological issues for the exam. With pediatric patients, keep in mind that at different ages, some aspects of the neuro exam are not applicable or need to be approached in a different manner. You may want to get a copy of the Denver developmental milestones sheet to get an idea of what is appropriate behavior given a child’s age. A small finger puppet may be helpful when trying to assess a child’s extraocular eye movements.

**Books/Supplies**
Dr. Pruitt, the course director, will provide self-study materials that include the “Yellow Pages” (a packet of practice questions) and “Nanatomy” (a small book with core neuroanatomy review that is sufficient for the shelf). Pay attention to the “yellow pages” questions and know these concepts for the exam. You may also want to use a clerkship review book to study for the shelf.
Remember to carry the extra tools you need for the neuro exam in your white coat: penlight, toothpicks or wooden cotton swabs, reflex hammer, tuning fork

Assignments
You will be asked to present a short case (based on something you saw in the outpatient clinic) to your fellow students and Dr. Pruitt.

Grading
This rotation is Honors/High Pass/Pass/Fail. The exam involves is a shelf exam and an OSCE where you will rotate through 4 stations (know how to do a good neuro exam and be able to counsel about common neurological complaints!).

Neurologic Exam
Cranial Nerves:
  I: Olfactory: not generally tested
  II: Optic: Can use the eye chart in Maxwell’s; Remember to do visual fields; assess color vision with MS patients
  III/IV/VI: Extraocular movement; light reflexes
  V: Trigeminal: A variety of things, (corneal reflex, jaw opening, bite strength), but most just test facial sensation
  VII: Facial: eyebrow raise, eyelid close, smile, frown, pucker, taste
  VIII: Vestibulocochlear: Hearing; Rinne, Weber, doll’s eye, ear cold caloric stimulation
  IX, X: Glossopharyngeal, Vagus: gag reflex, swallowing, palate elevation
  XI: Spinal Accessory: lateral head rotation, neck flexion, shoulder shrug
  XII: Hypoglossal: Tongue protrusion
Sensation: pain, temperature, vibratory, proprioceptive, 2-point discrimination
Strength: know the grading 0 to 5
Reflexes: know the grading 0 to 4+
Cerebellum: finger to nose, heel to shin, rapid alternating hand movements
Gait: tandem, walking on heels and toes
Mental status exam (see the Psych section for details): important for CNS disease

{ Emergency Medicine }

What students remembered...

“...When my patient came in with chief complaint of “asthma exacerbation”, but his lungs were clear and something just seemed off. On probing further, it turned out that he was severely
depressed and had recently had a number of traumatic events, and the only way he could think of to get help was to come in with a medical problem. It was 3am and the ED was quiet, so I was able to spend a lot of time with him... and then helping him get comfortable with the idea of accepting psychiatric help before getting him over to the PEEC (psych ED).”

“...When I got to laugh for hours with my patient who spent the evening telling me story after story about her crazy night out that left her with a painless but bloody laceration on her knee.”

“...When I sat on the floor of the ED for hours in the middle of the night playing games with two young children whose mom was unconscious from a drug OD in the other room, while we waited for child protective services to come get them.”

“...When I got to translate for a frightened Spanish-speaking patient with hypertensive emergency and see the relief spread over his face when he finally understood what was going on.”

“...When I got to tell a young couple who had been trying for years to have a child - had finally gotten pregnant, but were now in the ED with concern for a miscarriage - that their baby was alive and well.”

Emergency Medicine: Your first shift survival guide.

Before your first shift
If you haven’t done so recently, bone up on EKGs. Not a shift goes by that you aren’t asked to interpret an EKG. Also, remember to look at the old EKG and assess for any changes. Other than EKGs, just be prepared to be proactive, get involved, do anything, and see anything.

During the rotation
Work on expanding your differential diagnosis for certain signs and symptoms. High yield differentials to read up on: headache, fainting/loss of consciousness, shortness of breath, chest pain, chronic/acute cough, abdominal pain, altered mental status, knee and joint pain, and complaints of early pregnancy. Remember that the most frequent pimping question in the ED is “What do you think is going on here?” Even if you have no idea, having a large fund of knowledge on the differential diagnosis will allow you to talk your way through the problem. That being said, your differential needn’t be entirely inclusive--but you should have 1 or 2 potential diagnoses, ideally from different systems to show your superiors you’re thinking. To quote the course director “Ideally, for each chief complaint, you should have in your mind the top 5 life threats before you walk in the room. They may not be applicable to your patient, but should be able to verbalize that you thought of one or two and either ruled them in/or out through your H&P.”
Your presentations to the attendings and the residents as well as your participation within the entire team are probably where you will be graded the most. Presentations should incorporate relevant past medical history and be focused on the presenting complaint, however at this stage in the game, it is important to be more comprehensive erring on the side of completeness. You may be comprehensive in your H&P, but keep your presentation focused on the chief complaint. Then if the attending/resident asks for more info, you can give it, but you haven’t overloaded them initially with irrelevant information. If the patient gives you a complaint/symptom and you aren’t sure if this could be related to the chief complaint, ask or verbalize why you think it is related.

The presentations can be difficult early on, but a couple of tips are to look in Medview for previous visits and diagnoses as well as old EKGs. While an attending is interested in your detailed physical exam findings, in the back of his/her mind he/she is thinking about what needs to be done for the patient and is focused on things that could be life-threatening. The ED is primarily about identifying acute, life-threatening illness – give the scariest diagnosis first, and then move onto the more likely diagnosis. For example, your summary statement might go something like this, “In summary, this is a 45-year-old female with no known cardiac problems, negative family history, and normal EKG 3 months ago, who presents with 3 hours of “chest discomfort” and who admits to increasing her coffee and cigarette intake over the Holidays. We should be most concerned about ACS, Thoracic Aneurysm or even a Pulmonary Embolus, but given her symptoms this is most likely GI related and not cardiac (GERD, etc.).”

This is a great rotation to get to practice your procedural skills. Students should try to put in IVs and do blood draws on their patients. Additionally students often get to suture and do LPs. Be proactive about procedures. It is easy to go through this rotation and not do any procedures if you don’t ask.

**Schedule**

Students can go to HUP, Pennsy, Presby, CHOP, VA, and Reading Hospital. Depending on your site, your shifts will vary but students generally work approximately 116-120 hours over the course of the rotation in addition to didactics. Plan to work some nights and weekend shifts as well. If you’re at CHOP, you’ll do a few shifts at Presby or Pennsy.

**Didactics**

Didactics are held Friday morning from 8 AM – 12 PM. There have been some changes to the course in recent years – including a new course director – who is instituting a ‘flipped classroom’ model. This means that the lectures are being eliminated and students will learn the material ahead of time as ‘homework.’ The material will be provided as recorded lectures, videos and podcasts. The weekly didactics will feature case conferences: small group opportunities to apply knowledge. **The first case conferences will be during Orientation so you will have materials to review before your first day!** Dr. Tsao, the course director, really wants to emphasize the important of coming prepared to the case conferences!
Test
Spend some time going over the assigned readings for EM and save a few days before the Surgery shelf to make sure you study for the ED exam, since it is a separate, multiple-choice departmental (shelf-like) exam. Per the new course director, the ‘homework material’ – lectures, podcasts and readings – will be key to doing well on the exam. You’ll be asked to apply knowledge like you’ll do in the didactic case conferences. This is a big change for the course, so please be prepared to be flexible and defer to anything you hear from the course faculty!

Grading
The course is graded Honors/High Pass/Pass/Fail. The final grade is based on the test (20%) and clinical evaluations (80%). To qualify for honors students need to receive at least an 85% on the test and have a clinical grade of Honors on their Oasis evaluations. If you get less than 70% on the shelf, the highest grade you can get is Pass, regardless of clinical evaluations. You’ll also have to re-take the exam.
These 12 weeks will focus on learning skills related to the operating room. You will have the opportunity to see operations and procedures that range from an ear wax-extraction to a liver transplant. Even if you’re not interested in surgery, most students enjoy this unique experience. You will also focus on learning decision making skills about when a patient needs a surgical intervention and when other forms of management are more appropriate. These skills will be useful no matter which specialty you ultimately practice.

What students remembered...

“...When I was the only one around to do the little things for my patients when everyone else was either in surgery or taking care of urgent business. While medical students sometimes feel like we are not able to contribute as much during this rotation in the operating room, this is the time when making a patient comfortable by getting an extra blanket, finding them edible food in the pantry when they arrive to the floor past dinner time, taking an extra moment to see how they are feeling, really pays off. Your patients will let you know how much you mean to them.”

“...When I would stay in the room with my patients in the busy outpatient clinic after the surgeon had left the room, and would go back over everything that had just happened with them multiple times until they felt comfortable and had all their questions answered.”

“...When a scrub nurse, who I initially found to be very intimidating, came out to find me at the end of my first week to say bye and give me sutures for practicing at home.”

“...When an elderly man who came in after a fall was waiting in the trauma bay, he began “seeing birds flying” and generally becoming disoriented, and I had the time to sit with him and talk, and reorient and calm him…”

“...When I stuck myself with a needle during surgery, my attending was very supportive and caring. He took me straight to the ER. The next morning, when I rounded on the patient from that surgery, the patient exclaimed “Oh my goodness, I heard you got hurt - are you ok?!” She was so concerned about me, even though SHE was post-operative day #1.”

Overview

The Surgery Block is an 8-week period broken into 4 weeks of general surgery and two 2- week blocks of surgical subspecialty rotations (cardiac, thoracic, vascular, plastics, urology, etc). The 4-week block of general surgery is graded Honors/High Pass/Pass/Fail. The two 2-week blocks of surgical subspecialty are also graded Honors/High Pass/Pass/Fail. This is a change from previous years; the two 2-week blocks were previously Pass/Fail. Even if you think you have no
interest in surgery as a career, be aware that the basic skills you are taught during this block are required of all physicians. The surgeons are fond of saying to medical students that medical residents cannot consult surgery to sew in their central lines.

Please refer to the following website for up-to-date information about schedules, grading, and course logistics:

http://www.uphs.upenn.edu/surgery/Education/medical_students/medical_students_home.html

The Team

- **200 Medical Students**: There are typically one to two medical students per team. Not to worry if you are on a team with more than one student, there is certainly enough work to go around.
- **Sub-I**: This is a 3rd or 4th year medical student doing an advanced elective in surgery. He or she is expected to do/know more than you, so do not be concerned if that is the case. In surgery it is commonplace for the sub-I to get “first cracks” at the cases particularly when the senior Attending in a particular discipline is operating. That said, if you feel like you are truly getting the short end of the stick, you should approach the sub-I and discuss case selection. Try to exchange numbers with your sub-I the first day of the rotation.
- **Intern**: This is a first-year resident that is responsible for the patients on the service. You will have some interaction with the intern at the beginning and end of the day, but you will spend most days in the OR. If you have some downtime, it is wise to offer to help the intern as they can typically use it. Most surgery services have now switched to a night float system, which alleviates some of the intern’s burdens, but they will still be very busy and very grateful for your help.
- **Chief Resident**: Each team will have a number of residents on the service with the most senior being the chief resident. The chief resident is responsible for the day-to-day activities of the service. He or she rounds in the morning with the team and again in the evening when the day’s cases are finished. He or she will be responsible for much of the didactic teaching throughout the rotation, and as such, is somebody you should befriend.
- **Fellows**: Certain services (cardiac, thoracic, vascular, peds, transplant, trauma) will have fellows who have already completed a general surgery training program. There may not be a chief resident on these services and in those cases the fellow is responsible for the service. He or she will round with the team in the morning and again in the evening as would a chief resident.
- **Attendings**: These are faculty who oversee the care of all the patients on the service. Some Attendings are more approachable than others, but on the whole, the attending surgeons are interested in teaching enthusiastic medical students. Attending surgeons typically do not round with the team every day. You will interact with attending surgeons in the OR, in clinic, and on rounds.
Your Responsibilities

The responsibilities of the medical student on the surgical service are very service-specific. Accordingly, it is wise to sit down with your chief resident or fellow at the beginning of the rotation and sort out what the goals, objectives, and the expectations are for your time on service. Generally speaking you will have the following responsibilities:

**Pre-Rounds**

Prior to morning rounds, you may be responsible for pre-rounding on a number of patients on the service. Typically, pre-rounding involves gathering the numbers (vitals, I&O’s, labs) on the patients on your service. It is wise to find out what the information they would like you to gather before you meet. Some chiefs/fellows would like you to wake up the patient to talk and examine them while others may just want you to collect the patients’ data. If there is an outlier in any of these values, write down what time the abnormal vital was recorded and what the previous trends have been. Your sub-I will be a HUGE resource when it comes to negotiating the flowsheet in an efficient manner. It will be very early in the morning and you will have a number of patients to see, so becoming familiar with collecting vitals is extremely important.

Typically while you (and the sub-I) are pre-rounding on the floor patients, the intern is seeing the ICU patients and getting signout from the person on call overnight.

**Rounds**

Your senior resident (+/- the fellows, the Attending) will walk around with you and the junior resident/intern to all of the patients’ rooms. Before you walk in to the room, either you or the junior resident/intern will present the overnight numbers. It’s best to observe this drill first and then ask if you can present the numbers. Surgeons appreciate students who want to assume responsibility. Try to keep presentations concise, yet inclusive to maintain the efficiency of rounds. An example of such a presentation is as follows:

“Mr. Y is our 43yo male post-op day 3 status post right upper lobectomy. His Tmax overnight was 99.7 with a Tcurrent of 98.6. BP was stable in the 130’s-140’s/90’s with a pulse in the 90’s, ‘sat-ting” 98% on 2L oxygen by nasal cannula. He took in 2.3L and put out 2.0L with 1.7 of urine and 300cc from the chest tube.”

**Progress Notes**

Typically the intern on the service is responsible for writing morning notes which he or she will do while rounding. By the middle of the rotation you will likely be writing notes on the patients on whom you are pre-rounding. Surgical progress notes are typically VERY brief and focused with an emphasis on the PLAN!! Remember that surgeons want quick and concise. Ask your intern to see his or her notes early on in the rotation as an example to follow for your own
notes. You will also frequently write post-op check notes and/or pre-op notes for some patients (see Maxwell’s or pages 20-21 of this packet for more details).

A Word about the “Scut Bucket”

The “scut bucket” is a pail full of supplies that some teams use while on rounds. Typically the embarrassing job of toting the bucket is reserved for the person lowest on the surgical totem pole (i.e. you). As such you will likely be responsible for stocking the bucket before rounds as well as carrying the bucket around with you. Every evening make sure to stock the bucket and put it in a place (typically a call room) for safe keeping.

Some words of wisdom regarding the bucket:

- Don’t forget it in a room
- Don’t bring it into patients’ rooms that are on Contact Precautions (the rooms where you have to put on a yellow gown and gloves before you go in).
- Stock it every night.
- Each service has different “bucket needs”, but some good things to have in it:
  - 4x4s (lots)
  - ABD pads (stands for Army Battle Dressing, not Abdominal)
  - Sterile q-tips
  - Rolls of tape (silk and paper)
  - Medipore tape
  - Kerlex gauze
  - Safety pins
  - Suture removal kit
  - Staple removal kit
  - Sterile water/gauze

An important part of being a great surgery student is to do your best to assist the team. To this end scut bucket management is no exception. Your ability to anticipate needs will enhance or limit the team’s ability to get through rounds. For example, if you change a patient’s dressing every morning on rounds, try to have the appropriate materials ready when you enter the patient’s room. If you want to be even more of a help to the team, go in ahead of time and take the dressing down before the team enters the patient’s room. You may not know much, but if you are always eager to scrub on cases, regardless of how late they go, you will be well-regarded by your team. Thinking ahead DOES NOT GO UNNOTICED on surgical services!!

Operating Room Etiquette

(Note: you will learn how to scrub during orientation, so rest easy!)

- Make sure to observe positioning and prepping the patient, draping, dressings and takedown, and post-op note writing. Once you feel comfortable, assist your resident with these duties. Easy jobs for a clerkship student include having tape ready to pick up stray hairs from the patient’s body after your resident shaves them, cleaning the belly
button with alcohol swabs PRIOR to prepping, and pulling the pertinent CT or MRI scans up on the computer on the wall (not the computer that the nurses work on in the corner) if your sub-I has not already done so. These things will earn you huge points with your chief and show that you take the initiative to help in meaningful ways. It is a good idea to write “medical student: your name” on the white board while your resident is prepping the patient. You may also fill out the names of the other members of the team in that OR if they aren’t written already.

- The nurses can make or break your time in the OR. Whenever you walk into an OR make sure to introduce yourself to the circulator (the OR nurse that deals with issues during a case) and the scrub nurse (the OR nurse assisting the surgeon) and tell them that you are a medical student. ALWAYS treat them with respect, ask for their advice, and they will help you in innumerable ways.

- Make sure you give your gloves to the scrub nurse before you leave to scrub. ALWAYS ASK before dropping your gloves on the sterile table. Do not try and drop your gloves without practicing onto a nonsterile surface. The safest way to make sure you do not contaminate the table is to open the package without touching the gloves and allow the sterile scrub tech to reach in and remove the gloves from the package for you. Some scrub nurses prefer clerkship students to always provide their gloves this way.

- The safest place to put your hands to prevent you from contaminating anything is on the draped part of the patient immediately in front of you, which is usually the patient’s thighs or lower abdomen. Do not let your hands hang down once you are gowned. Anything beneath the level of the patient or the level of your abdomen is not considered sterile. However, everyone will contaminate himself or herself at some point. It is not a big deal. Step back from the field and do not touch anything. Discreetly let the circulator know and he or she will give you a new glove/sleeve/gown. Let your resident gown and glove before you at the beginning of the block so you can see how it is done.

- It’s ok to peek over someone’s shoulders, as it is sometimes very difficult to see what is going on. This will not bother the attendings or senior residents. Remember that the back and shoulders are not sterile though, so do not touch the surgeon when you are angled behind him or her.

- It is OK to very politely ask the circulator for a step stool.

- Be observant and mindful; learn when to stand back and get out of the way.

- DO NOT ask for instruments, except possibly for suture scissors when someone ties a knot (it is often the medical student’s job to cut sutures after a knot is tied) and you have been directed by your resident to cut in that particular scenario before. Ask where (with respect to the knot) and how to cut suture the first couple of times you’re told to do this job. It is not intuitive and the surgeons are rightly very particular about it being done properly.

- DO NOT take instruments off of the scrub nurse’s table or mayo. Do not lean on the mayo. Do not try to pass instruments between the doctors and the scrub tech. There is a particular way to do it and you will usually just slow down the process or possibly get stuck for your trouble.
• You can ask questions, but try to ask them at appropriate times. For example, if a patient is bleeding briskly and the team appears concerned, perhaps it is best to hold your question until the bleeding has been managed.
• Make sure your residents know you want to learn and are eager to be taught.
• It’s tough sometimes, but pay attention... you can learn quite a bit of functional anatomy in the OR. The surgeons will notice if you are completely checked out. Do mental exercises or whatever it takes to appear at least somewhat alert.
• Avoid asking questions you should know the answers to, such as “what is the blood supply of the spleen?” If you do, be prepared to have the question asked right back to you. e.g., “I don’t know Mr. Y, what do you think is the blood supply of the spleen?”
• Offer to write the Op Note when the case is done. Maxwell’s has a great, complete example and you can also find an example on page 21 of this packet.

Call

All students will be required to take one night of overnight call with a consult resident. The date of call will be pre-determined and assigned at the beginning of the rotation. In general, students are not expected to round during the weekends, but all schedules are team specific, so be sure to check with your chief resident.

Schedule

The schedule varies greatly from the various services and sites. The clerkship director has worked hard to ensure your surgical experiences are varied and has already assigned you to OR & clinic days, and to whom you should follow on what days. This information is detailed on the surgery student website as well as the schedule you are given at Orientation.

In general, 200 medical students on the Surgery Clerkship are expected to work 12-hour days, from 6am – 6pm. Although the Attendings, residents, and interns are aware of this, they will usually not be watching the clock. If there are adjustments due to conferences, grand rounds, etc. make sure to discuss what time you are expected to arrive and leave that day with either the Attending or residents.

Rounds typically last from 6:00am-7:00am, depending on the team and number of patients. Most OR cases will end by about 5-6pm. Upon the completion of the day’s OR cases, the team often sits down to discuss the patients on the service. These evening rounds are usually abbreviated and to-the-point but can be prime time when it comes to teaching.

There will typically be 1-2 days per week during which you will be in clinic with the Attending. This is a great opportunity to interact with Attending surgeons and to ask questions regarding disease management (i.e. the stuff on the shelf exam). Attendings are often a bit less tense during office hours as compared to the OR, so clinic is a great time to chat with Attendings about surgery and their lives as surgeons. Most surgeons (contrary to popular opinion) are actually nice people. Don’t be afraid to talk with—and learn from them.
Fridays: As with most of your clerkships, most of your Fridays will be reserved for didactics and PBLs (Problem-Based Learning) sessions. There has been a change from previous years in that you will not have didactics every Friday and some Fridays will be split between clinical duties and teaching sessions. Please refer to the Surgery Clerkship website for more information. The Friday schedule for the block will be posted there and you should check it every week to make sure you know which days have scheduled didactics and PBLs. Most teams do not expect you to round on Fridays before a full day of didactics. Just check in with your resident on Thursday to remind them.

What to Wear and Hygiene

On operative days, you can wear scrubs, but you should still look washed and awake. Make sure to wear comfortable shoes as you will be doing a lot of walking and standing. On clinic days you should wear professional/business attire. DO NOT wear scrubs to clinic, as many attendings will not allow you to see patients. You should wear your white coat and ID every day. Your white coat should not be excessively stained or noticeably dirty. Your fingernails should be clipped short. Certain scrub techs will not let you scrub if you have your fingernails painted (Pennsy).

What to Put in Your White Coat

- Stethoscope (The medical student is sometimes the only member of the team with a stethoscope during rounds. Your resident may occasional ask to borrow it while assessing the patient.)
- 4X4’s (at least five or six), Medipore, Disposable scissors
- Penlight
- Surgical Recall (or at least have it somewhere close at hand—can be kind of bulky in your pocket!)
- Maxwell cards (for Op notes/Post-op checks)
- Pens
- Alcohol swabs
- Snacks (i.e. granola bars, snack mixes, etc.) – Cases are often long and time is limited, so having something to eat in between cases should you not have the opportunity to go to the cafeteria is a good idea.

Books


Additional Requirements

- Each week, students will have PBL sessions taught by general surgery residents. You will have to facilitate one session during the rotation.
• You will also need to turn in 4 write-ups during the course of the block. Two of the four write-ups are done with PBL leaders - these can be in any format but need to be legible. Examples of different write-ups include one acute consult, new patient visit, one post-op visit, etc. They will be assessed for completion only and will not be assigned individual grades.
• You may be asked to do one or two topic presentations during each month, depending on the team/location—see the “Sample Documents” packet for an example of a surgery presentation.

Grading

The rotation is graded honors/high pass/pass/fail. The course exam is the Surgery Shelf Exam. Your final grade will be a combination of your general surgery scores, subspecialty grades, your PBL grade (given by your resident), and the shelf score. A minimum of 76 on the shelf is needed to qualify for Honors (change from 78 in previous years). With respect to the surgical subspecialty rotations, two weeks may not feel like much time to secure a good grade from your attendings and chief, but if you show up on time, exhibit enthusiasm, and do what you are supposed to be doing (i.e. present patients on rounds, go to conference, carry the bucket, stay until you are dismissed, etc.), you will be more than fine. The attendings and residents just want you to be professional and have a good attitude. A great way to start out each rotation is to ask the chief resident what his or her expectations are for you during your time on his or her team. This will set you up to be successful and put you on the right foot with your primary grader from the outset.

Tips for Studying for the Shelf

Part of the reason the 200 medical student is slated to only work from 6am-6pm is to allow you more time to study for the surgery shelf. And there’s good reason – the surgery shelf examination is challenging and requires preparation, especially since there’s a bit more of a disconnect between what you are doing on the service and what type of material is tested on the shelf. Even budgeting 30 minutes per night for reading can be a huge help come the end of the rotation. Question books (Pretest, Case files, etc.) are very good and often emphasize the integral concepts most often tested on the shelf, which tend to be medical management of patients with surgical issues rather than surgical techniques (USMLE World is a great resource for questions). Along those lines, many students find it helpful to do some of the more relevant sections of MKSAP and Step Up to Medicine (GI, Fluids and Electrolytes, onc), especially if you’re doing your surgery rotation before you’ve done medicine. These concepts are helpful for the surgery shelf as well which often tests your understanding of medical management of surgical patients. It is impossible to learn all of the subspecialty information covered on the exam so don’t worry if you can’t remember all of the LeFort fractures in the face (nobody can). Preparing for the PBL sessions is a great way to study for the exam, as the topics selected for the PBL sessions are “high yield.” Reading prior to the sessions and participating in the group discussion will reinforce many of the important general surgery topics often tested on the shelf.
Tips for Success

- Always be friendly and have enthusiasm even for the little jobs that you do (like getting numbers for pre-rounding).
- Be punctual. This is EXCEPTIONALLY important.
- At the end of each day before you go always make sure to ask your senior if there is anything you can help with.
- Find out what cases are scheduled for the next day and what anatomy you should read up on. You can look up the OR schedule on the UPHS Intranet. Ask your sub I or resident to show you. Surgical Recall is a great resource for pre-OR review. Chances are, 90% of the questions that will be thrown your way will be covered in the few page review of the operation in which you are about to scrub.
- Ask your resident for silk ties to practice tying knots at home or in your down time.
- Try not to drink a lot of fluids during the day. Hydrate well when you return home in evening. There is nothing worse than being scrubbed in with a full bladder.
- Always eat breakfast before an OR day.
- Know about the patients and the procedure being done. Residents like when you’re interested in what’s going on. It will also prepare you for the questions you are most likely to be asked
- Be safe. Protect yourself. Go slowly so that you do not stick yourself with a needle. If you do, SCRUB OUT and go to Occupational health (daytime) or the ER (after hours) IMMEDIATELY. Do not let anyone discourage you from following proper protocol and ensuring your health or safety. Your attendings and residents will almost always alert you if the patient has known Hepatitis or HIV and will take extra measures to protect everyone on the team. However, you can never be certain about which patients have blood borne illnesses and must always follow up a needlestick with the appropriate post exposure precautions.
- If you’re feeling stressed or having a hard time, talk about it to your friends, family, etc. Letting off a little steam and laughing at yourself always helps. If you are have a serious issue or concern, make sure to bring it to the attention of the clerkship staff. They are there to help you and ensure you have a good learning experience.
- ENTHUSIASM AND WORK ETHIC CANNOT BE STRESSED ENOUGH!! Residents pride themselves on working hard and expect the same from students. They WANT to teach students who want to learn!! Even if you are not interested in surgery, you will deal with surgical patients throughout your career, so it is important to understand what happens on a surgical service.
- GO IN WITH AN OPEN MIND!! Lots of students never think they will enter surgical fields and end up choosing surgical residencies. Regardless if you love or hate it, it is a really unique experience so try to enjoy it!
- Visit the Mod 4 surgery clerkship website and read the syllabus
What NOT to do

- Try to show up your fellow students (e.g., jumping in with the answer to a question that was directed to a fellow student). Everyone is there to learn and though it may come easily for you, it may be perceived as disrespectful.
- Show up your residents (e.g. jumping in with information on rounds that the chief resident/fellow did not present to the attending). The chief resident has been at this for a while, so chances are he or she knows what they are doing.
- Pimp the residents/fellows.
- Seem bored, uninterested, or insincere.
- Be the last to arrive and the first to leave (without consulting with your resident or fellow).
- Ask questions at inappropriate times (i.e. patient bleeding out).
- Interfere with the efficiency of the service. Try to learn about your team and know when to step up as well as when to take a step back.

First day suggestions

- Ask your resident or site coordinator (Attending) when they have a moment to go over what is expected of you for this rotation. Ask what to read about at night and what your role will be in terms of note writing, scut work, OR duties, etc, and how to best prepare for these roles.
- Find out what time you are expected to arrive and how to best help in the morning. You should first ask your chief or fellow, but he or she will likely refer you to the intern.
- Find out how to get the week’s OR schedule so you can read up on the cases.
- There is an on call room on Rhoads 4 immediately across from the visitor elevators where you can stow your bag and coat. Ask your resident for the code.
- Start to practice knot tying. Should you be given the opportunity to throw a knot or two in the OR, it is wise to have a semblance of an idea what you are doing. If you and any of the residents are just sitting around, ask them to show you how to tie knots. You will NEVER go wrong with a two-handed knot, but some attendings will be unhappy if you throw a one-handed knot. There are knot tying kits available for students through Surgery Education.

Halfway through your rotation on a service

Ask your chief for feedback and incorporate any suggestions for improvement. This will show that you can appropriately respond to constructive criticism and gives you the opportunity to work on anything that might have been identified as a weak point in your performance. If they feel that they haven’t seen you work for a long enough period of time, ask them if they wouldn’t mind giving you some suggestions to “improve your learning experience/be a more efficient student/etc.” It is always better to ask for specific feedback (i.e., “How can I improve the assessment/plan in Mr. X’s progress note?”). If you ask, “How
am I doing?” you’ll probably get “fine” which can mean anything from barely passing to Honors.

TRY TO HAVE FUN!! Be enthusiastic, read, ask questions, and help out in any way you can!! If you are relatively alert, friendly, and ask for guidance, you will do great!!

\{ Anesthesiology \}

The week-long pass/fail clinical rotation in anesthesiology is a great experience for 200 level students. Over the course of the week, you will help with all aspects of pre-operative, intra-operative and post-operative patient management. You will spend two days in the main HUP operating rooms, working with a resident and an attending, and two days completing electives in subspecialties of anesthesiology, including cardiac anesthesia, pediatric anesthesia, obstetrical anesthesia, regional anesthesia, pain medicine. Your experience will depend greatly on the residents you work with, the types of cases involved, and your interest level and motivation. In general, all of the residents are very excited about teaching medical students and clearly love their field. You can expect to learn a good deal about the induction of anesthesia, general anesthesia, local anesthesia, and the monitoring of physiologic functioning and how to respond to changes in those functions. You’ll also have great opportunities to practice IV insertion, placement of arterial lines, mask ventilation, and endotracheal intubation. Clinical experience is supplemented by a highly regarded lecture series covering important topics including general and local anesthetics, pain management, critical care, hypotension, and obstetric anesthesia. Relevant readings will be provided—no textbook is necessary.

\{ The O’s \}

What students remembered...

“...When my O’s medical student cohort had all the time in the world to cook dinner together, play together and get some good sleep on the weekends.”

“...When I met multiple patients with horrible head and neck cancers that were overjoyed to share their stories of how the ENT team had taken amazing care of them.”

“...When I met a girl my age who was a cancer survivor getting experimental treatment for her hip osteonecrosis. Pain-free for the first time in years, she was all smiles and excited to go back to college.”

“...When I could watch surgeries purely for fun without the pressure of grades.”
\{ Ophthalmology \}

The Ophthalmology week begins with an introductory session on the eye exam, use of the slit lamp, and looking at each other’s fundi. Be prepared to have your eye dilated and remember your ophthalmoscope, if you have one or can borrow one (but don’t worry if you don’t have one—you can share with other students). The week consists of a mix of lectures and clinic time, and you also usually have the option of spending time in the OR. You will rotate through Scheie, HUP, VA, and CHOP, and your experience is up to how much you put into it. You will be loaned a book for the week that has a lot of pretty cool pictures. Be sure to look at these photographs as a good portion of the exam at the end of the week consists of slides from the book. The exam is relatively stress-free and is pass/fail.

\{ Otorhinolaryngology \}

ENT is a well-organized week consisting of a variety of clinical activities and lectures. You may be provided with a short textbook/pamphlet, which contains a review of basic ENT topics. The test is pass/fail and is given on your last day—it is not intended to be stressful. You will have the opportunity to practice a complete head and neck exam on each other and see a laryngoscopy. Throughout the week you will have sessions on audiology, pediatric ENT, smell and taste, speech pathology, and head and neck cancers. You can spend time both in the OR and in the clinics.

\{ Orthopedics \}

This week-long course is composed of clinical sessions in the morning (roughly 8am to 12:30pm), a didactic session in the afternoon (roughly 1 to 3pm), and self-directed learning in the evening. There are no on-call duties. The course attempts to offer balanced assignments between the operating room and outpatient clinics, and between adult and pediatric conditions. Students who would like to be assigned to a particular service, or who would like to see orthopaedic oncology or foot surgery (both based at Pennsylvania hospital, where students are not routinely assigned) are encouraged to contact the course director at least a week in advance, before the assignments are made. The self-study component of the course is directed to mastery of a set of questions and answers covering basic topics in musculoskeletal medicine.

The questions are posted at

http://www.orthopaedia.com/display/Clerkship/Penn+Med+Self+Study+Questions

An open-response examination is administered on the last day of the course, comprising 5 questions chosen from this set. The course is graded pass/no credit. To pass, a students must attend at all sessions (or be excused) and score at least 90% on the examination.
AOA Guide to Review and Text Books for the Clinics

There are many books available for each clerkship. This is our list of what worked best for us. All of us learn differently from each other, so you will see quite a bit of variation among recommendations. It is best to choose your study materials early in the rotation and stick with them! Don’t let what other students are doing make you doubt your chosen method (as long as your chosen method includes practice questions) – reading 4 books briefly is generally not as good as reading 1 or 2 in depth. In general, while you will want to spend a good deal of time reading and reviewing, we feel that **practice questions are the best way to succeed on the clerkship exams.**

Going from the classroom-based curriculum to that of the clerkships is a difficult transition for many. There is a lot of information to get through and less time to do it. It is natural to require some time to figure out which study method will work best for you. A good approach early on is to use the same methods that you did for the pre-clerkship years, just adapted slightly for the increased volume of information. For example, if you were successful making flashcards before, stick with that plan when you start Mod 4. It will get easier as you get further into the year.

First, a general overview of the major series of review books/resources:

- **USMLE World**
  - This online question bank has become the central study tool for many students on the clerkships.
  - We recommend doing as many questions as possible; however, you should be sure to use the questions you get wrong (and the incorrect answer choices in the ones you get right) as a jumping off point for your reading.
  - The question bank is expensive, but worth it to many people. Some people choose to buy year-long subscriptions (you’ll want to get a subscription for the Step 2 CK bank). Some pairs or groups of people have shared subscriptions. You can reset all the questions **ONCE** during a one-year subscription.
  - The question bank can be downloaded and used on your smartphone or iPad. Good for efficient studying when you have down-time.

- **Online meded.org**
  - Free 5-20 minute videos covering many topics relevant to all clerkships.

- **First Aid**
  - This series generally provides a good overview, covering the basics of the important topics related to the clerkship.
  - Usually, however, these books are **NOT** detailed enough to be a sole study source.

- **Blueprints**
The books are fairly portable and can be read relatively quickly. For many of the clerkships, they are not complete enough (e.g. Surgery); however, in many cases they are useful as an overview early in the clerkship (OB, Neuro, Psych).

- **Blueprints**
  - Makes a series of Q&A books as well as review books. These are a good source of practice questions if you run out.

- **NMS**
  - This series is written entirely in outline format. The books are dense and full of detailed information; however, they are much more complete than Blueprints.
  - If you like the outline format, these books are very complete and may be all you need to read.
  - Questions at the end of chapters are generally useful.

- **BRS (Board Review Series)**
  - This series is also written in outline format, but the books are usually less dense than NMS.
  - For some rotations, these books can act as your main review source (supplemented with questions, etc.), but some books in the series are not detailed enough to serve this purpose.

- **Case Files**
  - This book has cases and questions which cover many of the important topics that you are expected to know. The cases are presented with explanations and answers following. Each case ends with a couple of review questions. The cases are comprehensive, but the questions are sometimes a bit easier than shelf questions. Usually relatively fun to read!

- **PreTest**
  - These are question books that most of us found very useful but don’t necessarily correspond in format with shelf questions. Questions are arranged via topic and explanations to questions are generally fairly complete, so doing the questions and analyzing the answers helps you learn the material.
  - Available as an app for your smartphone or iPad.

- **Kaplan Step 2 CK QBook**
  - This is a large question book geared towards the Step 2 CK exam, which happens to have questions that are nearly identical in format and difficulty to shelf exams. The book contains a couple of 50 question tests for each discipline and more for core rotations like medicine and surgery, and you would be wise to purchase this book and take the tests with time constraints in a test-like setting.

- **Appleton and Lange**
  - These are also question books. Each book has several complete practice tests, which are useful. Questions tend to be difficult, and several people noted that they could be damaging to confidence if done too close to the shelf.
  - This is a good book to read and helps you brush up on topics that you might not be comfortable with.
BY CLERKSHIP

First Aid for the Wards offers an overview of each clerkship, as well as a summary of each book and resource. Probably unnecessary, but if you’re nervous before starting clerkship year this might be a good thing to flip through at Barnes and Noble.

Medicine

One of the difficult parts of preparing for this exam is finding time to do it. Particularly if you are on an inpatient medicine service in the 8 weeks immediately prior to the test, it’s hard to find time to study. Try to use your patients and the write-ups that you have to hand in to learn about large topic areas. Keep in mind that it is nearly impossible to read the entirety of any of the three general medicine books because they are very long and you simply won’t have enough time.

- We highly recommend the online question bank USMLEWorld for Step 2 CK when studying for the medicine shelf. The questions are very similar to the shelf style, you can time yourself, and the explanations are very thorough. Worth the money!! Especially if you do your medicine shelf early in the year, doing your best to get through as many of these as possible will really pay off. Each question has fantastic explanations that will teach you a lot of high-yield information.
  - Many successful students use this Qbank as their only resource when studying for the shelf. This is to say that it has all of the information you will need to do well on the shelf. However, realize that students who choose this route tend to take their time with the questions, reading each explanation thoroughly and usually taking notes on the high yield topics.
- The following textbooks can be good references, but they are too long and low-yield to use as your sole study guide for this clerkship. You are better off being selective about which topics require more coverage and using the textbook or online references only for these topics.
  - Cecil’s Textbook of General Medicine
  - Kochar’s Concise Textbook of Medicine
  - Fishman’s Medicine
- A review book is very helpful for shelf exam review and almost everyone reads one of the ones listed below. One of these will serve well as a supplement to the Qbank – you could easily justify using one review book and Qbank as your only study materials.
  - Step up to Medicine: By far the most popular review book for the medicine clerkship. All the detail you need, and makes a great review for Step 2 as well. Most Penn students use Step Up and a question bank as their main study guides.
  - NMS: dense, but detailed. Questions are good for practice.
  - Blueprints: this book is a good overview, but is not at all detailed enough for the shelf exam.
First Aid for the Medicine Clerkship: This really covers most topics that you will need to do well on the shelf.

- If you need more questions than the 1000+ offered in UWorld, these question books have been used by students in the past:
  - MKSAP for Students: There are several editions of these books, all with questions that are similar to those on the shelf in terms of length and content, although they are often more detailed and specific than many shelf questions.
  - Kaplan QBook: This book has multiple sample exams with questions that reflect the shelf exam very well.
  - PreTest: A great supplement to MKSAP.

- Other resources:
  - You will need to have a good understanding of EKG reading during the clerkship and on the test. We recommend Dubin’s Rapid Interpretation of EKGs or Thaler’s The Only EKG Book You’ll Ever Need.
  - Pocket Medicine is a must to have in your white coat. You can skim topics for the main points just before you know you’re going to be asked a question, and there is space for your own notes.
  - Pharmacopia or EPocrates (PDA) for drug names, dosing, side effects.

Surgery

As is true for the medicine shelf, time is an important factor here. Focus on medical problems requiring surgical intervention, anatomy, post-operative management, and complications in your reading. Worry less about surgical techniques. This clerkship is a bit of a free-for-all as far as which references are most commonly used, and there aren’t enough questions in UWorld to use it as your sole source of information. If it’s an early clerkship for you, try a few different books and consider using this as an excuse to start studying for your medicine clerkship early (sorry that sounds gunner-y, but it really would be helpful). If surgery is a later rotation, you will likely be able to get by with Pestana plus maybe one other book. It is definitely worth it to do some medicine questions from MKSAP or USMLEWorld on relevant areas (GI, onc, etc.).

- Two textbooks of general surgery are recommended by the course director. It is much more valuable to use your time making it through a review book than looking through a text book, but if you’re going into surgery you might eventually want one of these.
  - Lawrence Essentials of General Surgery – preferred by the vast majority of us (don’t tell Dr. Kaiser).
  - Kreisel, Krupnick, Kaiser The Surgical Review

- Pestana: a PDF of this book will likely float around your class. VERY high yield. These questions are quite useful for the shelf but are in no way comprehensive. There is also an audio version of this book that you can find floating around Penn Dropbox.

- Surgical Recall has been popular in the past for shelf studying, but recent classes have found it to be more useful for looking good while getting pimped in the OR. Don’t use this as a comprehensive guide for the shelf.
• A review book may also be useful:
  o **First Aid for the Surgery Clerkship**: Very helpful and manageable for mid-week reading. This is probably the most used book and, along with something like Pestana, should prepare you well for the shelf.
  o **NMS**: As usual, dense and detailed. Questions were noted to be useful.
  o **Blueprints**: Not enough detail. Questions may be useful as they are similar in length to the questions on the shelf (i.e. LONG).

• Question sources:
  o **USMLE World**: Most widely-used question source.
  o **Kaplan QBook**: Recommended highly. Consider doing the medicine questions as well as the surgery questions as the content overlap between the two exams is quite high (60-80%).
  o **PreTest**: Recommended by most of us. A few of the answers in the book are incorrect, so if you find a different answer elsewhere, don’t get stressed about it.
  o **Surgery Case Files**: Cases with questions and detailed answers.
  o **A&L**: Questions are very difficult but useful, particularly for subspecialties.

• Other resources:
  o **NMS Case Book**: A great review of the whole body. Easy to get through and a great supplement to a review book.
  o **Surgery on Call**: This book offers a lot of detail on management of surgical patients. It is probably most useful for your subI rather than surgery 200.
  o Don’t buy a surgical atlas.

• Subspecialty Specific:
  o Trauma: A&L for questions (there is a lot of Trauma on the shelf). Pestana is also good for Trauma.
  o Hand Plastics: “The Hand”- a book that Dr. Chang will give you.
  o Transplant: Review immunology and immunosuppressing drugs before starting (graft v host, immunosuppression).

### Pediatrics

This shelf exam is sometimes underestimated but it is a hard test. You also have only 6 weeks to study for it, as opposed to the 12 you have for medicine and surgery.

• **Board Review Series (BRS)** is the book that has been traditionally used for this course. It is a very complete review book, however, the 2004 version is out of date. More recently, “**Step Up to Pediatrics**”, edited by Dr. Ronan (one of the course directors) has been recommended. **Nelson’s General Pediatrics** and **“Baby Nelson”** are textbooks. Most of us did not use them. Nelson’s is a huge book that is available online (from the biomed library page, MDConsult) and is useful for reading about specific patients/topics. Baby Nelson is more readable; some people found it useful, most noted that it was not an efficient use of time. Whatever book you choose for review, make sure to supplement it with questions – either UWorld alone or add one other book.
• **Other Review Books:**
  
  o **First Aid for the Pediatrics Clerkship:** This is an excellent outline of everything you need to know for the shelf, but it is not complete enough to be a sole study source. If you decide to use First Aid, make sure to supplement with more comprehensive sources.
  
  o **NMS:** This one is not as dense as many in the series. A combination of Blueprints and NMS was recommended by some people.
  
  o **Blueprints:** Although some people found this book to be all that they needed for the shelf exam, most felt that it was too basic. It may be useful in addition to another book, but in general, BRS is a much more helpful book.

• **Question Sources (you can definitely get away with just UWorld, but one additional book may also be helpful):**
  
  o **USMLEWorld:** Most popular.
  
  o **PreTest:** Highly recommended (most people use).
  
  o **Kaplan QBook:** Highly recommended (many people use).
  
  o **Case Files:** Highly recommended (most people use).
  
  o **A&L:** Not used by most people.

**Ob-Gyn**

• Most of us recommended using one book for an overview in this course:
  
  o **Blueprints:** The Ob/Gyn part of this series is more detailed than most of the other Blueprints books are. The majority of people felt that this was sufficient for the shelf exam, with the addition of a question source.
  
  o **First Aid for the OB/GYN Clerkship:** Once again, an excellent outline of all the topics you need to know for the shelf, but not comprehensive enough as a sole study source.

• **Question sources:**
  
  o **UWISE:** This resource is extremely high-yield for the shelf. You will get access info and password on the first day of the clerkship. Reportedly written by the same people who write the shelf. Relevance varies from test to test, but the questions are generally reflective of the exam and often extremely helpful. Do as many as you can. Do the questions you got incorrect again.
  
  o **USMLE World:** Again, widely used.
  
  o **Case Files:** Useful for doing well on this shelf, as most of the cases are identical to those you will see on the shelf.
  
  o **Kaplan QBook:** Moderately recommended.
  
  o **A&L:** Most people recommend using this book for practice questions, especially the full practice tests.
  
  o **PreTest:** A good number of the questions in this book are not pertinent or are incorrect, but some people use this book.
  
  o **Blueprints Q&A/ Blueprints Cases:** Both of these give more practice with solving clinical cases as you have to do on the shelf.
Psychiatry

- **Andreasen’s Introduction to Psychiatry** is recommended by the course director. Although it is very informative, it is quite long and detailed; the majority of us did not use it.
- Most people recommend using at least one of the following review books instead:
  - **First Aid for the Psychiatry Clerkship**: Great outline; all the topics you need to know for the shelf, highly recommended and very popular with Penn students.
  - **NMS**: More readable, concise, and shorter than most in this series. This is probably the most efficient review book to use. Questions are very useful.
  - **BRS**: Readable and concise, but still detailed enough for the shelf if you supplement with PreTest. This or NMS would be an appropriate main review book (just choose whichever series you prefer).
  - **Blueprints**: Somewhat incomplete, but a very fast read. Some found the med lists useful. May be helpful to read with BRS or NMS to help you get the bigger picture. Notably light on the pediatric syndromes that are prominent on the shelf.
- **Question sources**:
  - **USMLEWorld**: Likely the most widely-used question resource.
  - **PreTest**: Recommended by nearly everyone. We feel that you can probably skip the segment with questions on the history of psychiatry.
  - **Kaplan QBook**: highly recommended.
  - **A&L**: The best in the A&L series, highly recommended. Tough questions but important review.
- In addition, the medications are one of the most difficult topics to master. A pocket book devoted to them may be helpful. The Blue Pocket Medicine book on Psychiatric Drugs was recommended by some. More useful will be the crash course on psychopharm handout you receive in didactics.

Neurology

- **Blueprints**: this book is very readable. It is especially helpful for the shelf exam, since you only have four weeks to study, and it covers many of the basic topics that will be on the exam.
- Perhaps most importantly, spend time going over Dr. Pruitt’s review questions (“yellow pages”) that she hands out in the beginning of the course, as well as her review session on high-yield topics. **Memorize these questions**.
- Other books that may be useful:
  - **NMS**
  - **High Yield Neurology**
  - **Clinical Neurology Made Ridiculously Simple**
  - **Neurology Recall**
  - **Neuroanatomy Made Ridiculously Simple** (if you need some anatomy review)
Emergency Medicine
Again, this is not a shelf exam. For the most part, knowing the class notes well is sufficient. There is an old review packet that may be circulated by the upperclassman – but since the course has changed significantly, this may be out of date. Make sure you study the lecture materials provided to you, and you’ll do well. Past years have emphasized ultrasound and EKGS!
• NMS Emergency Medicine was recommended by some, but most people did not bother.

Family Medicine
There is no longer a textbook for Family Medicine. You are expected to do the online cases as practice for the exam, and review your notes from the lectures. This is both necessary and sufficient!

•♦  Exposure to Blood and Body Fluids  ♦♦
You are probably aware of the proper procedures for Universal Precautions. Nonetheless, a few extra words of caution are warranted. It cannot be stated too strongly that you are in the clinics to learn! This means that you will be performing procedures for the first time. You may be nervous and feel inexperienced. YOU ARE NOT REQUIRED TO PUT YOURSELF AT RISK. If you feel uncomfortable about the circumstances surrounding a procedure (i.e. the patient is thrashing around on the bed as you try to draw blood), DO NOT DO IT! Additionally, you will sometimes encounter situations where residents or attendings are not following universal precautions (e.g. wearing one pair of gloves in the OR) and you will be tempted to follow their example so as not to draw attention to yourself. THINK ABOUT IT: THIS MAKES NO SENSE. You have an entire career ahead of you. This is no time to be taking undue risks. The below policy on potential blood and body fluid exposures can be found in every single syllabus.

Penn Med policy regarding potential exposures is as follows:
Any medical student who sustains a needlestick or other wound resulting in exposure to blood or body fluids should follow the following protocol. Please keep in mind that drug prophylaxis following a high-risk exposure is time sensitive, therefore you must immediately seek help from the appropriate hospital department. Immediately wash the affected area with soap and water and cover the area with a dressing if possible. For an ocular exposure, flush thoroughly with water. Inform the supervising resident and immediately report to the following areas:

At HUP and the VA

• Go directly to HUP’s Occupational Medicine Division.

• If they are closed, report to the HUP Emergency Department.

• Identify yourself as a medical student who has just sustained an exposure.
• You will see a health care provider who is trained in assessing the risk of the exposure. If you are seen in the Emergency Room, an occupational medicine doctor is on-call 24 hours a day to provide immediate consultation on post-exposure drug treatment and counseling. Do not hesitate to ask the physician treating you to page the Occupational Medicine doctor carrying the needlestick pager.

• You will be counseled and advised about postexposure prophylaxis, if necessary.

• If indicated, you will be given a starter pack of the prophylactic drugs which are recommended in accordance with the current guidelines of the Center for Disease Control.

• Base-line blood tests will be done on you.

• The physician at Occupational Health will contact the attending physician of the source patient to expedite the process of getting consent to test the source patient.

• Request a copy of your treatment plan including baseline lab work and medications ordered and source patient results.

• Call Student Health Service (SHS) at 215-746-3535 to schedule a non-urgent evaluation at SHS within 1 week from exposure if possible.

• Bring your treatment plan, baseline lab results, list of medications ordered and source patient results with you to SHS.

• You will be given a schedule as to when to return to Student Health for follow-up testing.

If you are at the following hospitals, please go to the place listed. You will be treated in accordance with the hospital's needlestick policy for healthcare workers. All affiliated hospitals’ needlestick policies have been reviewed by the Director of Infection Control for HUP and meet established standards. **All follow-up testing for the students is done at Student Health Service. Students should bring their records to Student Health Service so that appropriate follow-up testing can be scheduled.**

**Children’s Hospital of Philadelphia** - Report to Occupational Health Service during weekdays or to the Nursing Supervisor on weekends and evenings.

**Presbyterian Hospital** – Report to Occupational Medicine or to the Emergency Room if they are closed.

**Pennsylvania Hospital** - Report to Employee Health or to the Emergency Room if they are closed.
Chestnut Hill Hospital – Report to the Emergency Department.

Chester County Hospital – Report to the Emergency Department.

Lancaster General Hospital – Report to the Emergency Department.

Reading Hospital – Report to the Emergency Department.

Outpatient Ambulatory Sites - Report to HUP Occupational Medicine or to its satellite at Radnor, whichever is a closer distance to your site.

Billing Procedures

The School of Medicine will pay for any charges not covered by the student’s insurance so the student does not incur any expense associated with the exposure. At the time of service, please provide your insurance information to the hospital. If you receive any invoice(s) for balance payments due, please bring these immediately to the Office of Student Affairs so the School of Medicine can pay these charges.

Additional Assistance

If you have difficulty getting the consent of the source patient, or any other problems associated with your needlestick, please contact Dr. Jon Morris, Associate Dean for Student Affairs, at 215-898-7190, 215-662-2131 or cell 215-313-6990.

✦✦ Attendance Policy ✦✦

- Attendance during clinical rotations is mandatory.
- Attendance will be tracked by the assigned clinical team.
- Students must ask permission to be absent 8 weeks in advance with the exception of acute illness for the student or family member or death in the family.
- Examples of possible accepted reasons to miss clinical or didactic time are: presentation of original work at national meetings, family wedding or participation in a wedding party, death in the family, personal or immediate family illness.
- Examples of unacceptable absences include traveling to spend time with significant other or attending to elective doctor appointments.
- Students must obtain permission from the appropriate clinical director prior to making travel plans.
- Students must include Anna Delaney in any communications to the clinical director regarding absence requests.
- Students should minimize any absence request to as few days as possible; it is not acceptable to book travel one or two days in advance of an event, thus missing more time from clinic.
- The clerkship director may require the student to make up missed time during the rotation.
• Any absences during the one week rotations must be approved in advance by and made up according to terms in agreement with the course director(s) prior to the start of Module 5.

Repeated or habitual absences will be brought to the attention of Drs. Goldfarb and Morris, and may result in a meeting before Student Standards.

***In case of illness: please don't come in and infect your co-workers/patients if you are unwell; HOWEVER, if it is a mild illness (such as a mild URI) you are expected to come in. In the past, absences perceived to be due to mild symptoms have been noted and unfavorably commented on by evaluators.

♦ ♦ ♦ Transportation ♦ ♦ ♦

School of Medicine Transportation System

The Office of Student Affairs has worked with the University Parking and Transportation Office to develop a safe, affordable way for students to get to various hospitals between the hours of 3:00 am and 7:00 am and home from the hospitals between 8:00 p.m. and 12:30 am. The system which has been established utilizes escort vans only available for medical students.

Purchasing Vouchers
In order to use this special service, you need to purchase transit vouchers from Carrie Barjenbruch in the Office of Student Affairs. Each voucher is worth $2 and one voucher is needed for each trip. The vouchers are sold in books of 20. Please bring a check to purchase the vouchers. Cash and credit cards are not accepted.

Boundaries
The shuttle service operates within the following boundaries:

North
- Spring Garden Street (Powelton Village)
- Market Street (West Philadelphia)
- Ben Franklin Parkway (Center City)

South
- Christian Street (Center City)
- Woodland Avenue (West Philadelphia)

East
- 8th Street

West
- 50th Street

EARLY MORNING SHUTTLE SERVICE
From 3:00 a.m. to 7:00 a.m., Penn Transit Services (PTS) will schedule special white 15 passenger vans marked "Univ. of Penn. Parking & Transportation", to transport medical
students to and from HUP, CHOP, Presbyterian Hospital, Veterans Administration Hospital, Pennsylvania Hospital and their residences, seven (7) days a week.

**Scheduling a Pick-Up**

These trips should be booked the evening before but no later than midnight (12:00 am) of the same morning of the trip. PTS will maintain a fifteen (15) minute window from the actual scheduled pickup time. This may vary depending on weather and road conditions. Therefore you need to schedule the ride for 15 minutes earlier than you would ordinarily need to leave to allow for this 15 minute window. To schedule a pick-up time, please follow the instructions below.

1. **Call 898-Ride.** You will get voice mail which will give you two options
2. Option #1 is for recorded information. Option #2 is to speak to a live operator.
3. After Option #2 is announced you must **push 4 on your telephone. (This will not be announced.)** This will take you to a private mailbox where at the prompt, please leave your name, request day and date, pick-up time, pick-up address, destination and your telephone number on the Voice Mailbox.
4. Be ready to leave at your scheduled time (vans are only required to wait for three minutes after they arrive at your location).
5. Have your voucher ready to give to the Shuttle driver when you enter the van.
6. Should you experience any delays in pickup over thirty (30) minutes, please call 898-RIDE **(Please do not call this number unless it is an emergency).**

**Procedure for Canceling a Pick-Up**

1. Pre-scheduled Cancellation between 7:00 am - 2:30 am, Monday through Sunday:
   a. Call 898-RIDE
   b. Press #4 after introductory message to reach the reservation line.
   c. Leave your message with name, address, date and time of pick-up.
   d. Your pick-up will be automatically canceled.
2. Emergency Cancellation between 12:00 am - 7:00 am, Monday through Sunday call 898-RIDE

You must call to cancel a scheduled pickup or it will be considered a "no show". Two "no shows" in a thirty (30) day period will result in a suspension of service for a one (1) week (7 day) period.

**EVENING SHUTTLE SERVICE**

To get home from campus or the hospitals between the hours of 8:00 pm and 12:30 am, Penn Transit Services has a special shuttle service just for medical students. This service will pick up students at the following stops: the Gates Pavilion, the Johnson Pavilion, Presbyterian Hospital and the VA Hospital and take them to their residences within the boundaries. To access this service please follow the instructions below.
1. Call 898-RIDE. Press #2 to speak with a live operator.

2. Identify yourself as a Penn Medical Student.

3. Let the operator know at which stop you are located (Gates Pavilion, Johnson Pavilion, Presbyterian Hospital or the VA.)

4. The van will pick you up within 15 minutes from the time that you call.

5. Have your voucher ready to give to the driver when you enter the van.

**PENN TRANSIT SERVICES (PTS)**
You may call the PTS Idea Line (898-IDEA) at any time for any compliments, complaints, or new ideas on improving this service. Shuttle Service operates 7 days a week, year-round, with the exception of all holidays observed by the University of Pennsylvania.

**PARKING**

HUP/CHOP: In Garage 44, on Curie Boulevard next to BRB II/III, there are a limited number of spaces which can be rented on a monthly basis. The current rate for parking in this lot is $182.75 payable by check made payable to the Trustees of the University of Pennsylvania. If you are interested in getting a spot for a given rotation, please contact the Office of Student Affairs for additional information regarding parking cards for this lot.

PENNSYLVANIA: There is no parking available for students at the hospital. There are two garages that are $55 per month that are relatively close to the hospital. They both have shuttles. If you are interested, please contact Marialaina Scafidi at Marialaina.Scafidi@uphs.upenn.edu. Otherwise, please plan to use public transportation during your rotations here.

PRESBYTERIAN: There is no parking available for students at the hospital. Please check the website below for parking options.
http://www.pennmedicine.org/penn-presbyterian-medical-center/visitor-information/parking-lodging-transportation/parking.html

VA: There is no hospital parking available during the week, but spots may be available on the streets near by (Baltimore Avenue, Woodland Avenue or Pine Street.) Please check for parking restrictions to avoid a ticket. On the weekends, you may park for free in the hospital parking lot if you show your ID to the guard. Another option is Garage 44, described above (HUP/CHOP).
### Quick Phone Reference

<table>
<thead>
<tr>
<th>Department</th>
<th>Phone</th>
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<tbody>
<tr>
<td>Office of Vice Dean for Education</td>
<td>898-8034</td>
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<tr>
<td>Office of Student Affairs</td>
<td>898-7190</td>
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<tr>
<td>Program for Diversity and Inclusion</td>
<td>898-8287</td>
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<tr>
<td>Registrar</td>
<td>898-4676</td>
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<tr>
<td>Office of Admissions &amp; Financial Aid</td>
<td>898-8001</td>
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<tr>
<td>Curriculum Office</td>
<td>898-8091</td>
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<tr>
<td>Office of Combined Degree Programs</td>
<td>898-8025</td>
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<tr>
<td>Biomedical Library</td>
<td>898-5815</td>
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<tr>
<td>Escort</td>
<td>898-RIDE</td>
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<tr>
<td>Student Health</td>
<td>662-2850</td>
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<td>University Information</td>
<td>898-7111</td>
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<td>Hospital of the University of Pennsylvania</td>
<td>662-4000</td>
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<td>Children’s Hospital of Philadelphia</td>
<td>590-1000</td>
</tr>
<tr>
<td>Pennsylvania Hospital (8 &amp; Spruce)</td>
<td>829-3000</td>
</tr>
<tr>
<td>Presbyterian Medical Center (39 &amp; Market)</td>
<td>662-8000</td>
</tr>
<tr>
<td>Veterans Administration Hospital</td>
<td>823-5800</td>
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</tbody>
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### HUP Directory*

#### General
- Admissions: 2335/6777
- Dictation: 7568
- ER: 3920/3943
- Med Records: 614-0114
- Operator: 662-4000
- Page Operator: 2222
- Patient Info.: 3308
- Pharm; inpt.: 2907
- Pharm.; outpt.: 2920
- Pharm; info: 2677 (cops)
- Security: 2677 (cops)
- STAT page: 3333
- Transport: 2467/2477

#### Wards
- F12: 3872
- F14: 3804
- Ravdin 6: 3563
- Ravdin 7: 3815
- Ravdin 9: 3864
- S8: 3891
- S9: 3807
- S10: 3817
- S11: 3823
- S12: 3882

#### Laboratories
- Blood Bank: 3448
- Chemistry: 6830
- Coags: 3454
- Cytology: 3216/3209
- MICU: 3880
- IMCU: 7195
- CCU: 3890
- CICU: 3836
Endocrine 4021/3420  
General 6830  
Heme 6196/6990  
ABG 3724  
Microbiology 3415  
STAT lab 2510  
Surg. Path. 6226/6526  
Toxicology 3474  

**Radiology**  
Angio 4034/3080  
Chest 3061/3005  
CT Body 3142  
CT Head 3480  
ER Rdng. Rm 3054  
File Rm 3058  
GI Fluoro 3518  
GU 3053/3015  
MRI 6570  
Nuc Med 3076  
Scheduling 3005  
US 3123  

**Other**  
Dialysis 2646  
EEG 2661  
Nutrition 2069  
OT 3270  
PT 7773  
PFTs 6420  
Resp Therapy 2555  
Social Work 2375  
Speech 2784  
Vascular 2084  
XRT 2428  
Rehab 3464  

*Can also be found in Rolodoc app (see section on Useful Apps for Clinics)*
Disclaimer: These write-ups are VERY detailed! You will write more detailed write-ups on Medicine and Peds, while far less involved ones on Surgery and Ob/Gyn. These are the sort of long, formal H&P’s that may be expected when turning your write-ups in for a grade or at the beginning of clerkship year. However, as the year progresses, on a day-to-day basis, your H&P’s should include only pertinent information to your patient. As time passes, many attendings will expect that you will become more efficient with your words: you should strive to be both thorough and concise in your write-ups and your presentations over the course of the year. But, be sure to check in with your residents and attendings for feedback because everyone is different.

**MEDICINE**

**Source:** Patient, reliable historian

**CC:** Severe abdominal pain, nausea, and vomiting.

**HPI**
The patient is a 34-year-old male with a past medical history of hypertension and porphyria (both dx 2005) and recent hospitalization for pneumonia complicated by empyema, s/p chest tube and subsequent removal on 10/5 presenting on 10/9 with intractable abdominal pain, nausea and vomiting.

The patient was initially diagnosed with porphyria in 2005, when he presented to an outside hospital (OSH) with abdominal pain and was found to have elevated urine and serum porphyrins (no records of specific lab values). Since then, he has had “typical” porphyria attacks occurring 1x/year, with symptoms lasting about 1 week. During attacks, he feels full body weakness (non-focal), is febrile, diaphoretic, constipated, with nausea, vomiting, and some shortness of breath (SOB). Urine is usually red/brown colored during attacks. Attacks do not involve focal neurologic signs, changes in sensation, seizures (pt has no lifetime history of seizures), GU issues (other than change in urine color), or pain other than abdominal pain. Patient does not know of any triggers. He is not being treated, nor is he being followed by a hematologist or a PCP. He usually manages his attacks at home with warm baths, colace and Tylenol ES.

During this course of illness, the patient initially presented to an OSH on 9/30 with R back and flank pain (per sister in law, he was writhing in pain), SOB, and a mild, non-productive cough. He was afebrile. Pain was not typical of a porphyria attack per the patient. A chest CT showed a R pleural effusion, and the patient was started on ceftriaxone and azithromycin for presumed pneumonia/parapneumonic effusion, which was later switched to Zosyn and Levofoxacin. RUQ US was normal and V/Q scan showed low probability of PE, lower extremity US was negative for DVTs. On 10/2, R pleural effusion was drained by IR (OSH pleural fluid studies in lab
section). On 10/2, the patient had a R chest tube placed, which was removed 10/5. Repeat chest CT on 10/7 showed a loculated pleural effusion in the R major fissure. The patient showed significant clinical improvement, and was discharged on 10/7 on Levofoxacin 750mg PO daily x 2 weeks, amlodipine 10mg daily, and metoprolol 25mg BID.

For the current admission, the patient presented to the ED on 10/9 with 3 days of severe abdominal pain (worst in the epigastric region, but all over abdomen) and 1 day of nausea and vomiting (non-bloody). The patient tried home pain meds (Tylenol, ibuprofin) with no relief of symptoms. He describes pain as typical of his porphyria attacks. He also denies fevers/chills, but endorsed several months of night sweats. He denied cough, chest pain, SOB, change in GU habits (no red/brown urine with this attack), bloody stools, or pain other than abdominal pain. He was not feeling weak at home, but since arriving at the hospital has begun feeling generalized weakness/fatigue.

The patient was initially admitted to the Transition Unit, and was transferred to the Martin service on 10/10 in the setting of lack of improvement in symptoms.

**PMH:**
Hypertension dx 2005
Porphyria dx 2005 (specifics unknown)

**PSH:**
Appendectomy 2005

**Social history:**
- EtOH: 1 drink/week
- Tobacco: 1ppd since teenage years, quit six months ago
- Marijuana use daily
- Denies other illicit drug use
- History of incarceration for 6 months in 2006
- Employment: Works as a prep cook. No known toxic exposures.
- Lives with wife and 5 kids

**Family history:**
Mother (deceased) with possible history of leukemia vs other blood disorder (patient unsure). Otherwise non-contributory.

**Medications:**
Levofoxacin 750mg PO daily x 2 weeks (start date 10/6) for pulmonary infection
Amlodipine 10mg daily for HTN (started at d/c from OSH 10/7)
Metoprolol 25mg BID for HTN, hx of LVH on TTE in 2004 (started at d/c from OSH 10/7)

**Allergies:**
NKDA
**ROS:**
General: No recent weight loss, otherwise as per HPI
HEENT: No headaches, changes in vision, changes in hearing, sore throat, loss of consciousness
Pulmonary: As per HPI
Cardiac: No chest pain, palpitations, orthopnea, PND, edema, cyanosis, claudication
GI: Constipation with porphyria attacks, no bloody stools, pain as per HPI
GU: No dysuria, frequency, hesitation, incontinence. Otherwise as per HPI
Derm: No rashes, blistering, or ulcers.
MSK: Diffuse weakness as per HPI. Otherwise normal ROM, no arthralgias or focal joint issues.
Heme: No easy bruising or bleeding, no history of clots. Porphyria as per HPI.
Neuro: No hx of seizures, no hx head trauma. Otherwise as per HPI.

**Physical Exam:**
Vitals (On arrival to Founders 14)
T 98.3 P 86 BP 190/91 RR 18 SaO2 98% on RA

General: Drowsy, weak, significant pain with any movement
Eyes: No scleral icterus, PERRLA, pinpoint pupils
E/N/M/T: nl hearing, nl teeth/lips/gums, clear oropharynx
Neck: nl appearance and movements, JVP flat, trachea midline, no thyroid masses, no LAD
Respiratory: No increased work of breathing, no accessory muscle use. No dullness to percussion. Decreased breath sounds on the right lower half, normal breath sounds on left. (Possible decreased respiratory effort 2/2 pain). No crackles, rhonchi, or wheezes.
Cardio: Regular rhythm, no M/G/R. No JVD.
Lymphatic: No LAD (cervical, supraclavicular, axillary)
MSK: Strength 5/5 in all extremities.
Extremities: No peripheral edema, no cyanosis.
Skin: No rashes, ulcerations or blisters.
Neuro: nl CNs. No decreased sensation.
Psych: AAOx3. Intact memory, though imperfect historian. nl affect, judgment, insight.
Lines: PIV x 1

--HUP Labs--
Panel: 131/4.6/101/23/17/1.43/104
AG = 7
CBC: 12.6/11.0/359

--OSH labs--
10/2/12 pleural fluid studies: 200cc of dark yellow fluid removed. WBC 4061 (94% PMNs) LDH 695, protein 5.1, glucose 7, pH 7.09, AFB negative, culture NGTD at 7 days, Gram stain negative. (Serum LDH and protein not available in OSH records).
9/30 @ OSH: Cr 1.9 (baseline 1.4)
3/2011- corproporphyrin 608, uroporphyrin 2979, protoporphyrin 3761, proporphyrin 37614

--HUP Imaging--
10/9 CT chest: There is a moderate loculated right pleural effusion with associated pleural thickening and a loculated effusion with fluid trapped in the major fissure. Mild platelike atelectasis R lung. The pleural fluid is high attenuation indicating either blood or protein within the fluid. All of these findings indicate that this is an exudative effusion. Etiology is not clear. Given the history of "walking pneumonia" there is a moderate likelihood that this could represent a viral pleuritis however, other causes for exudative effusion should be considered.

10/9 CXR (PA + lateral): Similar appearance of the chest with masslike opacities in the right lung, incompletely characterized. Recommend CT for further characterization

--OSH Imaging--
10/7 CXR: loculated R effusion in the R major fissure and the R lower lung field
10/1 LE US: negative
10/1 V/Q: indeterminate to low prob for PE findings more consistent with pneumonitis, mass or infiltrate in the R mid and lower hemithorax
10/1 CT chest: Partially loculated R pleural effusion significantly increased in size since 2 days earlier. Minimal bullous disease on the left and a focal area of fibrosis at the medial aspect of the LLL. Very small pericardial effusion.
9/30 RUQ US: Normal gallbladder/spleen/pancreas/kidney/liver
9/29 CT a/p: small R effusion w/ opacity in the RML which may represent PNA vs atl. No hydronephrosis/stones.
2004 TTE: LVH

**Assessment/Plan**
Summary: The patient is a 34-year-old male with a PMH of hypertension and porphyria and recent hospitalization for pneumonia complicated by empyema, presenting with intractable abdominal pain, nausea and vomiting of similar character to his typical 1x/year porphyria attacks. Physical exam is remarkable only for diffuse tenderness and guarding of the abdomen and decreased breath sounds over the right lung base c/w the location of his empyema. EKG was normal, UA was negative, OSH records show a hx of elevated serum and urine porphyrins, and CT c/a/p showed a right loculated effusion but no other abnormalities.

#Abdominal pain/nausea/vomiting. Given history of porphyria and similar presentation to previous attacks, likely porphyria, however also possible gastritis/peptic ulcer vs pain from R pleural effusion.
Differential:
1) Porphyria: Hx of porphyria, with elevated porphyrin levels, similarity of attack to previous
2) Gastritis/peptic ulcer disease: in support - epigastric pain, n/v, possible chronic NSAID use for pain, former smoker, recent stressor. Against - not documented previous H pylori test. No upper GI bleeding. Abdomen painful but not peritonitic.

3) Referred pain from pleural effusion

Less likely:

4) Pancreatitis: Normal lipase, WBC only moderately high, not peritonitic. No hx of gallstones, no EtOH abuse.

5) PE: V/Q scan @ OSH – low probability PE, LE US no DVTs. Not tachycardic/tachypnic


7) Cardiac/inferior MI: No evidence on EKG, no SOB. In favor: n/v, weakness, fatigue.

8) Kidney stone/obstruction: Pain is constant, not colicky, epigastric region. UA negative (no hematuria, BUN/Cr at his baseline, 9/29 US @ OSH no hydronephrosis, no nephrolithiasis.)

9) SBO: passing stools, no high pitched bowel sounds.

10) Mesenteric ischemia/vasculitis: No hematochezia.

11) Appendicitis: Appendectomy 2005

Workup/Management:
- Porphyria: Repeat urine and serum porphyrins
- Pain mgmt: dilauded working well, zofran, prochlorperazine, PPI
- Cardiac: EKG
- Gastritis/PUD: Ask about NSAID use, hx gastritis. H. pylori serology testing. t/c endoscopy with biopsy.
- Ppx: PPI, H2 blocker, pain control, anti-emics.
- Renal: t/c renal ultrasound, KUB (also r/o SBO), t/c repeat abd CT

#Pleural effusion - CT chest w/ continued presence of loculated R effusion in fissure and under RLL. Currently does not seem to be source of symptoms.

Pleural fluid glucose <60 narrows ddx: Rheumatoid pleurisy/Complicated parapneumonic/Malignant effusion/Tuberculosis pleurisy/Lupus pleuritis. Lowest glucose concentrations found in rheumatoid pleurisy (sometimes undetectable). In TB/Lupus/malignancy = 30-50. WBC< 5000 – more likely in rheum, TB, malignancy

Differential:
1) Parapneumonic: history and studies c/w complicated parapneumonic, however no bacteria isolated, (although 3 days into abx therapy) and only 4K WBCs,, No persistent opacities -> should last 4-6 weeks.

2) Rheumatoid pleurisy: Pleural fluid analysis typically reveals a white cell count <5, very low glucose, a pH less than 7.3, and usual presentation is with high pleural fluid LDH level (ie, greater than 700, our patient 695). Possible cholesterol empyema (normal presentation is sterile with elevated chol >65.)

3) TB (although not lymph predom, PPD neg at OSH, AFB neg prior to Levofloxacin). TB almost always with pleural fluid protein >4, +incarceration hx
4) SLE: usually WBC >10, our patient only 4.
5) Malignancy: inconsistent with pleural studies (usually lymph predom)

Workup: f/u ANA, RF, CCP, QIFG
- t/c repeat thoracentesis, though previously only 200cc removed, not large fluid collection on CT
- On Levofoxacin
- t/c pulm consult for further mgmt

# Acute on chronic kidney injury - Cr. 1.9 on OSH admit, 1.59 here-->1.43, improved w/ IVF, likely pre-renal
- Baseline Cr 1.43 per OSH reports, likely 2/2 hypertensive kidney dx, no h/o DM. GFR 69-73 = Stage 2
- t/c CKD w/u: HIV, Hepatitis serologies, Rheum w/u as above, check if small kidneys on renal US.
- Prevention: t/c adding ACE-I (Renal protection and BP control), low protein, low salt diet

# Hyponatremia - DDx includes volume depletion from decreased PO intake vs SIADH from pain/pulmonary process/Porphyria
- hypoNa worsened w/ IVFs
- f/u serum osm, urine lytes, FENA

#Hypertension – Likely 2/2 to pain and increased catecholamine release (seen in acute porphyria attacks). Per wife, typical systolic BPs not during attacks are in the 130s. However, TTE in 2004 showed LVH, so possible more chronic.
- Started on amlodipine, metroprolol at OSH, restart here. Check if meds porphyrinogenic.
- Explore reason for TTE in 2004

#FEN
- Can get electrolyte abnormalities in porphyria (hypoNa, hypoMg, hyerpCa)
- monitor and replete as needed

#PPx
- SQH, PPI, BB

#Dispo
- Needs Heme, PCP f/u
Informant: Mother

Chief Complaint: "Fever, cough, and spitting up blood"

History of the Present Illness: This four-year-old female with no significant past medical history was in her usual state of good health until ten days prior to presentation to the hematology floor at CHOP, when she began having fevers of 101.1-102°F and a non-productive cough, according to her mother. She was given Motrin and Vicks 44 at this time, with some defervescence, but little amelioration of her cough. Her mother denies that the patient had a runny nose, sore throat, red eyes, carache, vomiting, diarrhea, changes in appetite, changes in urination, or a notable decrease in energy during the first three days of illness. The patient reached a maximal temperature of 105.8°F on the third day of illness, at which point she was taken to the Emergency Department at Fitzgerald-Mercy Hospital. At the ED, pneumonia, otitis, and postnasal drip were ruled out, and the patient was sent home with Motrin, a diagnosis of a viral upper respiratory infection, and advice to visit a doctor if the fever did not remit in three days, according to her mother. Throughout the fourth and fifth days of illness, the patient’s fever remained consistently above 101°F, reaching a maximum of 103.8°F, and the patient had one episode of vomiting each day, each occurring immediately after administration of Vicks 44. On the sixth day, the patient woke up in the early morning with a cough and vomited again after administration of a new dose of Vicks 44. However, during this episode of vomiting, the patient developed a mild nosebleed that did not remit over the course of the next day.

One day after onset of the nasal bleeding (day seven of illness), the patient presented to her pediatrician at Jefferson Pediatrics with a continued nosebleed, cough, and fever, and a new complaint of abdominal pain. While in the office, the patient had an episode of hematemesis that included noticeable clotted blood. She was then sent to the Jefferson ED, where she was found to have pancytopenia on CBC. At Jefferson, she was noted to have abdominal tenderness in the right upper quadrant, and she received three transfusions of packed red blood cells and platelets in addition to a dose of cefepime. She was then transferred to CHOP and admitted to the oncology service, where she was also noted to have abdominal tenderness, although the tenderness had expanded to include both upper quadrants. At this point, she was also started on intravenous fluids with bicarbonate, at 1.5 times maintenance in case of tumor lysis in the future. She remained on the oncology floor for three days (until day ten of illness), during which she was noted to have right knee pain and one black, tarry, heme-positive stool. The knee pain resolved with a very low dose of morphine and was not accompanied by any physical exam abnormalities or evidence of bleeding. A bone marrow biopsy was completed while on the oncology floor (day ten of illness), and the marrow was noted to be hypocellular with islands of normocellular marrow and a left shift, but no apparent malignant cells. She was transferred to the hematology service after marrow analysis and a diagnosis of aplastic anemia.

The patient’s mother denies frequent illnesses in the past, as well as any other bleeding or bruising before or since onset of the illness, including blood in the urine. She had not noted any rashes or skin changes before presenting to the Jefferson ED, but after being shown some petechiae in the hospital, she noted that petechiae were present on the day or two before presentation at Jefferson (days six/seven). Her mother reports that she has been afebrile since admission to CHOP and that she has been eating well but drinking less than normal.

Past Medical History:
1) Eczema, currently.
2) Hospitalized for skin boil, last year.
3) Acid reflux, as an infant. Resolved during infancy.

**Medications:**
Triamcinolone for eczema. Dosing details not known.

**Allergies:**
Packed red blood cells—caused itching at Jefferson when administered on the day of presentation at CHOP. No known allergies to medications, foods, latex, or contrast.

**Birth History:**
The patient was born via induced vaginal delivery at 42 weeks. According to her mother, she was noted to have jaundice for the first day or two, which resolved spontaneously. She remained at the hospital for six days after birth due to severe reflux.

**Immunizations:**
According to her mother, she is currently up to date on her immunizations.

**Growth and Development:**
The patient’s mother has no growth or developmental concerns, noting that the patient walked earlier than most other children, was easily potty-trained, and has been doing well in pre-K classes.

**Exposures:**
There is one cat in the patient’s home and no known sick contacts in the home, although the patient does attend daycare, where it is likely she came into contact with sick peers.

**Nutrition:**
Specific details about the patient’s diet were not obtained.

**Primary Medical Doctor:** Dr. McNutt at Jefferson Pediatrics.

**Family History:** The patient’s parents have no known medical problems. One of the patient’s maternal great-grandmothers had diabetes, cervical cancer, and a myocardial infarction, another maternal great-grandmother had breast cancer, and one paternal great-grandfather had prostate cancer. Patient’s mother denies hypertension, diabetes, excessive bleeding, and aplastic anemia in the family.

**Social History:** The patient lives with her mother and her maternal grandfather, and she attends pre-K five days a week.

**Review of Systems:**
*General* – As per HPI. Did not ask about weight changes or dizziness.
*Skin* – As per HPI. Did not ask about itching or scaling.
*Head* – Did not ask about headaches, loss of consciousness, seizures, or head injury.
*Eyes* – As per HPI. Did not ask about icterus.
*Ears* – As per HPI. Did not ask about difficulties hearing or ear discharge.
*Nose* – As per HPI.
*Mouth/Throat* – As per HPI. Did not ask about oral lesions, tongue pain, cavities, or hoarseness.
*Neck* – Did not ask about lumps in neck or stiff neck.
Cardiovascular – Did not ask about edema, chest pain, cyanosis, or history of a heart murmur.
Lungs – As per HPI. Did not ask about wheezing or dyspnea.
Gastrointestinal – As per HPI. Did not ask about dysphagia, odynophagia, or jaundice.
Genitourinary – As per HPI. Did not ask about vaginal or urethral bleeding and discharge.
Hematology – As per HPI.
Allergy/immunology – As per HPI/PMH. Did not ask about lymph node swelling.
Endocrine – Mother denies polydipsia, polyphagia, and polyuria. Did not ask about goiters or abnormal weight changes.
Musculoskeletal – Did not ask about fractures, trauma, joint swelling, or joint stiffness.
Neurological – Did not ask about muscle atrophy, paralysis, weakness, spasticity, tremors, involuntary movements, changes in sensation, or lack of coordination.
Psychological – Mother denies difficulty sleeping. Did not ask about anxiety or phobias.

Physical Examination:
VS: Temp 37.4°C (axillary), BP 102/52, P 73, RR 20, SpO₂ 100%, RA
Growth parameters: Weight 16.3 kg (50th percentile), Height 75th percentile (Did not record actual value in centimeters.)
Skin: Scattered hyperpigmented areas. A few scattered small petechiae on anterior neck and upper chest.
Neck: No palpable lymph nodes and no masses. Neck supple.
Chest: Normal breathing rate and rhythm with minimal effort. Normal chest shape and no accessory muscle use or retractions; no pectus carinatum or excavatum. Spine is midline with no scoliosis or kyphosis. Respiratory excursion not assessed. Percussion not completed. Lungs clear to auscultation bilaterally. No rales, rhonchi, or wheezes.
COR: Regular rate and rhythm, with normal S1 and S2 and no audible S3 or S4. 1-2/6 systolic ejection murmur. No heaves, thrills, or rubs. Peripheral pulses, jugular venous pulse, and carotids not examined. PMI not palpated.
Abdomen: Bowel sounds present, with no bruits. Abdomen soft, non-tender, non-distended, with no guarding or rebound. No masses or hepatosplenomegaly.
Extremities: Extremities warm and well-perfused. No peripheral edema. No visible thumb or radial abnormalities. Moves all extremities equally, with full range of motion of all extremities. No knee tenderness to palpation or passive movement. Did not examine femoral or axillary lymph nodes.
Genital/Anal: Deferred.

Laboratory/Imaging Studies:
Hematology:
From Jefferson ED, before transfusion (day 7 of illness): WBC=1.8, Hgb=4.5, Platelets=8
From day of transfer to hematology floor (day 10 of illness): WBC=3.4, Hgb=9.7, Platelets=43
**Virology:**
Influenza A = positive
EBV = past infection
Parvovirus B19 = negative

**Pathology:**
Bone marrow biopsy = Hypocellular with islands of relatively normal cells with a left shift.

**Summary:**
In summary, this 4 year-old female with no significant past medical history was transferred to the hematology service for further evaluation and management after a ten-day course of illness that culminated with diagnoses of influenza A infection, otitis media, and aplastic anemia. The course of illness included seven days of fever and cough (days 1-7, Tmax=105.8°F), three episodes of non-bloody, non-bilious emesis (days 4-6), a mild nosebleed with a duration of 1.5 days (days 6-7), one episode of hematemesis (day 7), three transfusions of packed red blood cells and platelets (day 7), one episode of melena (day 10), and one episode of right knee pain with a duration of less than one day (day 10). The physical exam is notable for pale oral mucosa, dull and bulging TM’s, a 1-2/6 systolic ejection murmur, and a few scattered petechiae on the palate, anterior neck, and upper chest.

**Impression:** The patient presents to the hematology floor with recent diagnoses of influenza A infection, otitis media, and aplastic anemia. Aplastic anemia can result from a variety of causes, both acquired and inherited. Because of this patient’s young age, both inherited and acquired etiologies must be considered, but the lack of other known abnormalities or malformations decreases the likelihood of an inherited disorder. The most common inherited form of aplastic anemia is Fanconi Anemia (FA), with a heterozygote frequency of 1 in 300 in the United States and Europe. FA results from an autosomal recessive or X-linked mutation in a DNA repair gene, FANCD1, which is identical to BRCA2, a breast cancer susceptibility gene. FA is generally diagnosed between ages 6 and 9, but it has been identified in children above and below this age range. This patient, at age 4, is still within the reasonable age range for diagnosis of FA, but her young age does lower the likelihood of FA being the cause of her anemia. Furthermore, 60-70 percent of FA patients have associated congenital malformations, including hypopigmented and cafe-au-lait discolorations of the skin, thumb abnormalities, microcephaly, and hypogonadism, and an even larger percentage of patients exhibit short stature. This patient’s average height and lack of known malformations further decreases the likelihood of FA being the cause of her pancytopenia, but certainly does not rule out the diagnosis. It is important to screen for FA in this case because almost 25% of patients with FA later develop malignancies and many patients have underlying involvement of other organ systems, so appropriate intermittent cancer screenings and treatment for other organ manifestations should be initiated as early as possible.

The next three most common inherited causes of aplastic anemia are Dyskeratosis congenita (DC), a syndrome of ectodermal dysplasia that is thought to result from a mutation in genes important for the function of telomerase, Shwachman-Diamond syndrome (SDS), a syndrome resulting from an unknown mutation that includes exocrine pancreatic insufficiency, short stature, skeletal anomalies, and progressive marrow failure, and congenital amegakaryocytic thrombocytopenia (CAMT), a disorder that results from mutations in the thrombopoietin receptor gene. All three of these disorders, however, are quite unlikely to be the cause of this patient’s marrow failure. Both DC and SDS would exhibit marrow failure in conjunction with other significant abnormalities, and both CAMT and SDS would be expected to present much earlier than age four, generally appearing in infancy. Full marrow failure can also occur in other inherited disorders that usually present with only a cytopenia in a single cell line (such as Diamond-Blackfan anemia), but such cases are very rare, and thus these causes are very unlikely in this patient.
Seventy to eighty percent of non-hereditary cases of marrow failure do not have a clearly identified cause, but known etiologies of aplastic anemia include radiation exposure (causing dose-dependent marrow failure), medications (including phenylbutazone, chloramphenicol, gold, sulfonamides, anti-epileptics, nifedipine, and cytotoxic drugs), industrial chemicals (especially benzenes), infection (especially viruses), and pregnancy. Most known cases of acquired marrow failure in children are post-viral (especially post-hepatitis) or resulting from drug or toxin exposure. This patient's lack of known exposure to radiation, chemicals, and drugs implicated in causing marrow failure reduce the likelihood of these etiologies, although toxic exposures should be investigated if no other cause can be determined.

Give this patient's clinical course and history, infection is the most likely cause of her marrow failure. A variety of bacterial and viral infections (including Influenza A) can result in transient pancytopenia by unknown mechanisms, and specific viruses such as non-typeable hepatitis viruses (i.e. not A, B, C, or G), HIV, and Parvovirus B19 can cause marrow failure by direct damage to marrow stem cells by the virus itself or by resultant cytokine release from T cells. This patient could have marrow failure from her influenza A infection or from another concurrent or previous viral or bacterial infection that has not yet been identified.

**Plan:**

1. **Pancytopenia:** - Monitor with serial CBCs, ANCs, and reticulocyte counts  
   - Search for an etiology via diepoxybutane (DEB) testing (for FA), HIV testing, Parvovirus testing, and hepatitis A/B/C testing  
     a) **Anemia:** - Monitor hemoglobin level and vital signs  
        - transfuse pRBCs again if necessary  
     b) **Thrombocytopenia:** - Monitor for bleeds  
        - Prevent injuries by limiting activity  
        - Transfuse platelets if bleeding occurs or if platelets drop below 10,000  
     c) **Afebrile neutropenia:** - Monitor for fever or other signs of infection (especially pneumonia due to Influenza A status)  
        - Begin G-CSF injections  
        - Monitor ANC after G-CSF administration  
        - Arrange for home delivery of G-CSF, parental teaching about home G-CSF administration, and home nursing visits to help with initial home doses of G-CSF
2. **Otitis media:** - Continue cefadroxil (50 mcg/kg, every 8 hours, IV)  
3. **Influenza A:** - Seems to be resolved or resolving—monitor for fevers and bacterial superinfections  
4. **Melena:** - Hemoccult stools to monitor for further GI bleeding  
5. **Right knee pain:** - Seems to be resolved—monitor for further pain, swelling, or decreased range of motion  
6. **Fluids and nutrition:** - Continue house diet, encourage PO fluids, and consider discontinuation of IV fluids if PO intake is adequate
SURGERY

CC: RLL nodule

HPI: Patient is status-post nephrectomy on 3/29/08 for renal malignancy. Nodule was identified in pre-op chest CT scan. Patient has no respiratory complaints, although he complains of mild pain over his incision. He has been active since his nephrectomy and takes no medications for pain.

PMH:
- Type II Diabetes Mellitus
- Hyperlipidemia
- Hypertension
- Atrial fibrillation – single episode which occurred 12 years prior to this visit

PSH:
- Tonsillectomy & Adenoidectomy
- Right nephrectomy

Medications:
- Actos – 45mg PO qd
- Altace – 5mg PO qd
- Aspirin – 81mg PO qd
- Januvia – 100mg PO qd
- Nadolol – 20mg PO qd
- Zocor – 20mg PO qd

Allergies: NKDA

Family History: Patient describes a history of diabetes in his brother and cardiac disease with a history of MI in his father.

Social History: Patient is not a current smoker but has a 20 pack-year history and quit 10 years ago. Patient drinks approximately 2 alcoholic beverages per week, and does not use illicit drugs.

ROS:
GEN: No fevers, chills, weight loss, malaise, fatigue, or weakness
HEENT: No headaches, hearing loss, tinnitus, ear pain, or ear discharge; No nosebleeds, congestion, stridor, or sore throat; No trouble with vision, eye pain, or photophobia
CVS: No chest pain, palpitations, orthopnea, claudication, leg swelling, or PND
Chest: No cough, hemoptysis, sputum production, SOB, or wheezing
GI: No heartburn, nausea, abdominal pain, vomiting, diarrhea, constipation, or blood in stool
GU: Hematuria – presenting complaint for RCC in 2/08, No dysuria, frequency, urgency, or flank pain
Musculoskel: No myalgias, neck or back pain, joint pains, or falls
Endo/Heme: No easy bruising or bleeding
Neuro: No history of seizures, focal weakness, or dizziness
Psych: No history of psychiatric disease, insomnia, or substance abuse
Skin: No rash or itching

PE:
BP 128/71, Pulse 73, Temp 97.5F, Resp 20, BMI 31
Gen: Oriented x 3, well-nourished, no distress
HEENT: Normocephalic, atraumatic
Eye: Conjunctiva normal, EOMI, PERRL
Neck: ROM normal, neck supple, no thyromegaly, JVD, tracheal deviation, or stridor; no lymphadenopathy
CVS: RRR S1 S2 noted, no m/r/g, no clubbing, cyanosis, or edema, intact distal pulses
Chest: Effort normal, breath sounds normal; no respiratory distress, chest tenderness, wheezing, or rales
Abd: S/NT/ND, NABS, no guarding, no rebound
Musculoskel: Normal ROM, No edema, No tenderness
Neuro: Alert and oriented x 3
Skin: No rashes or change in pigmentation

Labs: None

Imaging: Indeterminate 7mm nodule in RLL on CT with contrast

Impression: Indeterminate lung nodule found incidentally on preop screening CT of the chest. Patient asymptomatic and recovering well from recent surgery.

Plan: Recommend that patient have serial CT scans to follow the lung nodule. He will have the next scan in one month and follow-up in the office after that time.
OB/GYN

CC: Post-menopausal vaginal bleeding

HPI

BSC is a 59 yo G2P2 who presents with heavy vaginal bleeding. The bleeding has been going on for as long as she can remember, and she does not recall ever going through menopause. It occurs at irregular intervals for varying amount of time, with the duration of bleeding becoming longer over the past year. In the past year the bleeding has become especially heavy, and she reports large clots and must use diapers and pads to contain the bleeding. She is afraid to leave the house since she often bleeds through her clothing. The heavy blood loss has led to recurrent anemia, and she was admitted on 7/1/12 for 4U pRBC transfusion (Hg 8.2 -> 9.7).

She was started on megace (magestrol acetate) by her primary gynecologist, which helped her bleeding somewhat for one week, after which it returned to its previous level despite reported medication adherence. On 6/20, her primary gynecologist attempted a hysteroscopy and D&C, but the procedure was complicated by heavy bleeding. The resulting curetage tissue showed only decidualized tissue, but the biopsy and hysteroscopy was suboptimal given the bleeding.

She denies dysmenorrhea and pelvic pain, but complains of back pain. She feels “weak”, but denies syncope and pre-syncope. She denies urinary and bowel symptoms.

PMH:
1. Morbid obesity (BMI 37.7)
2. HTN
3. OSA

PSH:
1. D&C (6/20/12)
2. Hernia repair
3. Cholecystectomy

OBGYN Hx
- G2P2, 2 uncomplicated spontaneous vaginal deliveries
- Menstrual history not ascertained in detail, but patient asserts that her periods have been regular and normal flow throughout most of adulthood

Allergies
None

Medications
Megestrol acetate, 80 mg bid
Lisinopril (unknown dosage)
Family History
Cancer in mother and sister (unknown type)

Social History
- Married, 2 adult children, not currently sexually active
- Denies current or past tobacco use, alcohol use, drug use

ROS
Constitutional: denies fever/chills. feels weak
Skin: denies rashes
HEENT: denies eye problems
Cardiovascular: denies chest pain
Respiratory: SOB when walking
Gastrointestinal: denies heartburn, N/V, abdominal pain, constipation
Genitourinary: denies dysuria, urinary retention, changes in frequency
Musculoskeletal: denies myalgias
Neuro: denies HA, dizziness
Psychiatric: denies depression

PE
BP 134/73, HR 95, SpO2 99% RA, height 5’2”, weight 370 lb (BMI 37.7)
Constitutional: Morbidly obese white woman
Head: Normocephalic and atraumatic.
Eyes: PERRLA, no scleral icterus
Cardiovascular: Normal rate and regular rhythm. + S1/S2. No gallop and no friction rub. No murmur.
Pulmonary/chest: Effort and breath sounds normal. no wheezes, no rales.
Abdominal: Large pannus. 5-6 cm umbilical hernia. Soft. No tenderness, rebound, or guarding. No HSM.
Lymph nodes: No cervical or inguinal lymphadenopathy
Extremities: bilateral LE edema L>R
Skin: Warm and dry, red under pannus.
Psychiatric: Normal affect, mood and judgment.
Neurologic: AAOx3. CN II-XII intact, strength and sensation grossly intact.

Labs & Studies:
CT: Enlarged uterus with contour suggesting multiple fibroids. Fluid in the endometrial canal probably does contain some blood products but there is no evidence of extravasation of contrast pooling on arterial or delayed phase imaging. Note that image quality through the
pelvis is somewhat suboptimal in this very large patient, and a small area of hemorrhage could conceivably be missed.
- Uterus: 16.9 x 8.32 x 10 cm
- EMS: 1.34 cm, 1.64 cm on TVUS
- R ovary: 3.15 x 1.21 x 2.49 cm
- L ovary: 3.4 x 1.84 x 2.73 cm
- Fundal myoma: 7.83 x 6.69 x 6.76 cm

EMC: Secretory endometrium containing secretory glands in a background of pseudodecidual changes of stroma compatible with exogenous hormonal administrations

Hemoglobin:

**Problem list**
1. Heavy vaginal bleeding
2. Abdominal hernia
3. HTN
4. OSA
5. Morbid obesity

**Assessment**
59 yo obese white female presents with chronic heavy vaginal bleeding requiring transfusion, with CT findings suggesting fibroids and a TVUS concerning for a 16.4 mm endometrial stripe.

Primary Problem: Heavy vaginal bleeding
- Given CT and D&C findings, fibroids vs endometrial hyperplasia/cancer are at the top of the differential.
  - Fibroids: CT consistent with fibroids, and they may explain the bleeding. However, lack of pelvic pain/dysmenorrhea goes against this diagnosis, and fibroids are rarer in a patient in her late 50s.
  - Endometrial hyperplasia vs cancer: A consideration due to the patient’s age, risk factors (obesity, hypertension) and large endometrial stripe on imaging. D&C was negative, however the procedure was complicated by heavy bleeding and thus was sub-optimal. The history of cancer in her mother and sister is suspicious for possible genetic factors, although their specific type of cancer must be determined.
  - Endometrial polyp
  - Adenomyosis: Unlikely given the lack of pelvic pain/dysmenorrhea, but patient may be at risk from increased estrogen due to abdominal obesity. Consistent with enlarged uterine size.
  - Vaginal atrophy: Unlikely given lack of atrophy on exam, quantity of bleeding, and abnormal CT findings.
  - Dysfunctional uterine bleeding: diagnosis of exclusion
  - Hypothyroidism
Plan

1. Heavy menstrual bleeding
   - Labs: TSH, trend CBC
   - Ferrous sulfate supplementation. Monitor for signs of anemia and transfuse if Hg < 7.
   - Options for diagnosis/management
     - Continue medical management with megace, or switch to another progesterone derivative such as the Mirena IUD. Could also try a GNRH agonist like Lupron. Since megace did not work, however, it seems unlikely that medical treatment will suffice for this patient.
     - Given that she has failed medical therapy and her blood loss is both dangerous to her health and detrimental to her QOL, the benefits of surgery outweigh the risks. Options include:
       - Myomectomy: need further characterization of fibroid prior to surgery. May be unsuccessful if fibroid is not the primary cause of bleeding.
       - D&C: Can attempt a more extensive D&C to fully remove all abnormal tissue and possibly generate a pathological diagnosis. Likely to be complicated by further bleeding however, and is not a definitive solution.
       - Hysterectomy: Given the patient’s habitus, TAH would be safest, and would allow for staging if frozen endometrial specimen is positive for cancer (vs a laparoscopic or vaginal approach)
       - BSO can be performed simultaneously with TAH to reduce the patient’s risk for subsequent ovarian cancer or cyst formation, given that a subsequent surgery would be dangerous given her risk factors.

2. Abdominal hernia
   - Consult GI surgery. Pelvic surgery will be difficult due to the patient’s habitus, so a panniculectomy simultaneously may be preferred. GI surgery could perform a hernia repair at the same time, saving the patient from multiple separate operations.

3. HTN
   - Continue lisinopril for now
   - Stop lisinopril 24 hours pre-op and restart when needed for high BP post-op

4. OSA
   - Continue CPAP’
FAMILY MEDICINE-SOAP Note

Patient: CJ

S: CJ is a 35 y/o female with PMH obesity, HTN, and hyperfunctioning thyroid nodule (s/p thyroidectomy 2006) who presents with chief complaint of fatigue. She states that she is “always tired” and has felt this way for the last year. She has been working the night shift at her job for the past six months and thinks this may contribute to her fatigue, but also states she felt tired before her switch at work. She gets around 6 hours of sleep during the day and often does not feel well rested upon waking. She sleeps alone and does not know if she snores; she does not recall waking up gasping for air at night. She denies morning headaches and falling asleep while at work. The fatigue has not gotten any particularly worse, but she decided it was time to “get it checked out.”

Past Medical History:
Medical
-HTN: diagnosed at age 32; well-controlled on HCTZ 12.5mg
-Thyroid nodule: hyperactive; s/p thyroidectomy 2006
-Obesity: BMI 44; currently researching gastric bypass surgery

Surgical
-s/p thyroidectomy 2006; patient thinks it was only partial; not on thyroid replacement

Medication
Hydrochlorothiazide 12.5mg once daily

Allergies: NKDA

Social
Smokes 7-10 cigarettes a day; is trying to quit
Denies EtOH, illicit drugs
Not currently sexually active

Review of Systems:
Constitutional: denies weight loss/gain, night sweats, chills, fevers
Cardiovascular: denies chest pain, palpitations, dyspnea at rest or with exertion.
Gastrointestinal: denies nausea, vomiting, diarrhea, constipation, melena, hematochezia, jaundice, abdominal pain.
Genitourinary: Admits to menorrhagia for 10+ years; uses 8 super tampons on the heaviest 1-2 days of her period. Her periods come every 28-30 days and last 5 days. Denies bleeding between periods, dysuria, dyspareunia.
Endocrine: denies polyuria, polydipsia, heat/cold intolerance, change in skin, hair or nails, change in bowel habits.
Psych: Admits to a depressed mood, difficulty concentrating at work over the last 6 months, decreased interest in activities that she used to enjoy. Denies change in appetite, excessive guilt, or suicidality.
O:
T: (not done) BP: 120/82  HR 68  RR 12  Weight: 275  Height: 5’6” (BMI: 44)
General: pleasant, overweight woman sitting in chair and reading
Neck: 5cm scar over thyroid, normal movements, trachea midline; no palpable masses
Cardiovascular: normal sounds; no murmurs, rubs or gallops; normal pulses, no edema, no clubbing or cyanosis
Respiratory: symmetric chest expansion and respiratory effort, clear to auscultation
Abdomen: no masses or tenderness, normal bowel sounds, no hepatosplenomegaly
Genitourinary: deferred; patient had just seen her gynecologist in AM

A:
1. **Fatigue**-the patient has several possible reasons for her fatigue. First, she is working the night shift at work, which she is still having difficulty adjusting to and may be affecting the quality of her sleep. Given her obesity, she is at risk for OSA, which may explain the reason why she does not feel well rested even after sleep. She also had thyroid surgery in 2006; this may have caused hypothyroidism resulting in her fatigue and symptoms of depression. The patient also complains of menorrhagia; her heavy periods may be causing anemia that is resulting in the patient’s fatigue, although she is not complaining of chest pain or shortness of breath. Finally, the patient has noticed a depressed mood and difficulty concentrating lately; her fatigue may be a symptom of depression.

2. **Hypertension**-currently well-controlled on HCTZ.

3. **Obesity** - the patient has made several attempts to lose weight using diet and exercise; given her young age and motivation, she may benefit from gastric bypass surgery.

4. **Depressed Mood** - the patient currently has 3/9 criteria (depressed mood, fatigue, and difficulty concentrating) for MDD.

5. **Menorrhagia**-patient followed by gynecologist. She was told that she may have fibroids, but she has not followed up on this.

P:
1. **Fatigue**
   a. CBC-r/o anemia
   b. TSH-r/o hypothyroid
   c. Sleep study-r/o OSA; patient needs test for gastric bypass eval as well
   d. Discussed possibility of switching back to day shift at work
   e. Follow patient’s mood and monitor for other symptoms of depression-consider trial of anti-depressant; patient was not ready to try one today; Wellbutrin may be a good option for mood improvement + smoking cessation.

2. **HTN**
   a. Continue HCTZ 12.5mg once daily with goal BPs <140/90
   b. Continue in office BP monitoring; encourage patient to check BP at home

3. **Obesity**
   a. Patient being evaluated for gastric bypass
   b. Sleep study
   c. Discussed importance of diet and exercise

4. **Depressed Mood**
a. Patient wary of taking antidepressant at moment—counseled to call office if symptoms worsen or if she begins to feel hopeless/suicidal. Also discussed option of psychiatrist/psychologist involvement.

5. Menorrhagia
   a. Consider pelvic US to r/o fibroids if not already done by gynecologist
   b. Patient refusing birth control; informed that birth control may help bleeding. She will consider and discuss with gynecologist.

6. Health Maintenance—up to date with screening tests, immunizations
   a. Flu Shot in 10/2008
   b. Lipid Panel, SMA 7 in 6/2008
   c. Pap Smear 12/2008
   d. Smoking Cessation—discussed at this visit, patient said she would like to come back to discuss medication options for smoking cessation
   e. f/u in 1-2 weeks to go over CBC, TSH results, discuss smoking cessation and treatment for depression.

•◆ Sample Topic Presentations ◆•

Again, please do not think that you always need to make presentations that look exactly like this. They can be far less detailed (and do not have to have pictures) depending on how long you have to research the topic and the length of time you are given to present. DO always put your name on your hand-out and make sure it is no longer than 1 page front and back!
A Case of Acquired Hydrocephalus

**History:** 31 year-old white female presenting with increasing “migraine” headaches.

**Differential Diagnosis of Headache:**
- Tension-type
- Migraine
- Cluster
- Trigeminal neuralgia
- Vascular causes (stroke, IPH, SAH, SDH, AVM, unruptured aneurysm, arterial hypertension, venous thrombosis)
- Infection (meningitis, encephalitis, abscess)
- Brain tumor
- Hydrocephalus
- Decreased CSF (s/p LP, etc.)
- Extracranial causes (sinusitis, TMJ, temporal arteritis)

**Imaging:**

![Imaging Images]

**Differential Diagnosis of Hydrocephalus:**
- Obstruction/Noncommunicating:
  - Congenital: Neural tube defects, congenital aqueductal stenosis, X-linked hydrocephalus, Chiari malformation, Dandy-Walker malformation, Vein of Galen malformation, other congenital malformations, syndromic forms (with trisomies, etc.), intrauterine infection (TORCHS)
  - Acquired: CNS infection, tumor, post-hemorrhage (inflammation/scarring)
- Impaired CSF absorption—Inflammation of subarachnoid villi
- Excessive CSF production (rare)—Functional choroid plexus papilloma

**Differential Diagnosis of Third Ventricle Lesion:**

| - Astrocytoma, GBM, oligodendroglioma, craniopharyngioma | - Ependymal tumor/cyst | - Choroid plexus papilloma |
| - Metastasis | - Colloid cyst | - Choroid plexus carcinoma |
| - Medulloblastoma, primitive neuroectodermal tumor, teratoma (kiddies) | - Epidermoid/dermoid cyst | - Central neurocytoma |
| - Intraventricular meningioma | | - Primary CNS B-Cell lymphoma of the choroid plexus (!) |
Amyotrophic Lateral Sclerosis (ALS)

1) Extreme physical activity is a risk factor for development of ALS. TRUE OR FALSE
2) There is a higher incidence of ALS in U.S. Gulf War veterans than in the general population. TRUE OR FALSE
3) What is the most common autonomic symptom patients with ALS experience?__________________________________________
4) What percentage of ALS patients had sensory abnormalities identified by NCS in one study?
   a) 65% b) 4% c) 12% d) 23%
5) What laboratory tests do you need to monitor for patients on rituximab therapy?_______________________________________

Case: A 62 year-old white male office worker with a history of HTN, hypothyroidism, and CAD s/p stent placement presents with left foot drop and hyperreflexia at the left ankle. Patient notes no other weakness and denies any sensory or autonomic symptoms. No other abnormalities are present on exam. Can this patient be diagnosed with ALS at this point? What is this patient's likely prognosis and disease course? How typical is this patient's history for ALS?

Epidemiology:
- Incidence in Europe/North America = 1.47-2.7 per 100,000 per year
- Prevalence in Europe/North America = 2.7-7.4 per 100,000
- 90% of cases are sporadic, 10% are familial
- Possible higher incidence in Caucasians
- 1.3-1.5 times more common in males than females
- Peak incidence is at age 74
- Only clear risk factors are age and family history
- Physical activity and trauma are probably not risk factors for developing the disease, but may contribute to younger age of onset and faster progression
- Environmental exposures (heavy metals, factory byproducts, DEET, etc.) have also been proposed as risk factors, but none have been confirmed thus far
- Survival motor neuron (SMN) gene mutations may be related to disease progression as well as risk of sporadic form
- Prevalence is high in Guam, West New Guinea, and parts of Japan—this may be related to consumption of cycad plants that are rich in an excitatory amino acid (BMMA)

Pathophysiology:
- Degeneration and death of pyramidal and Betz cells in the cortex, leading to gliosis in the corticospinal tract
  - Loss of large myelinated fibers in motor nerves, with denervation atrophy of muscles and fiber type grouping
  - Loss of frontal or temporal cortical neurons, as well as loss of neurons in other locations, including the hippocampus (in some cases)
  - Intracellular inclusions in degenerating neurons and glia—neurofilament inclusions in spinal motor neurons, Bunina bodies (cystatin C aggregates), and ubiquinated inclusions
- Etiology is unknown—some proposed mechanisms:
  - Superoxide dismutase type 1 mutations (toxic gain of function vs. abnormal protein aggregation)
  - Excitotoxicity (excessive glutamate)... rituximab is anti-glutaminergic!
  - Defective cytoskeleton (problems with axonal transport, etc.)
  - Mitochondrial dysfunction (possibly from oxidative stress)
  - Viral infection
  - Excessive apoptosis
  - Abnormalities in growth factors (VEGF of special recent interest)
  - Microglial activation/inflammation
The Psychiatric Manifestations of Multiple Sclerosis (MS)

The Basics:
- MS is demyelinating disease of unknown etiology, with the predominant theory being that it results from autoimmune IgG production and alteration of lymphocytes in the CNS, causing inflammation, demyelination, and axonal disruption.
- Highest risk groups: Females, Northern Europeans, smokers, patients with other autoimmune diseases.
- Diagnosis based on symptoms and lesions disseminated in space and time, i.e. >1 attack + white matter lesions in >1 area of the brain, at >1 time.
- Can present with a wide variety of neurological manifestations, including sensory symptoms (optic neuritis, numbness, tingling, pain), motor symptoms (weakness, internuclear ophthalmoplegia), fatigue, epilepsy, and bowel/bladder/sexual dysfunction.
- Course of disease is variable and can be classified into four categories:
  1) Relapsing-remitting (66-90% at onset)
  2) Primary progressive (10-15% at onset)
  3) Progressive relapsing (15% at onset)
  4) Secondary progressive (~30% of relapsing eventually develop purely progressive disease).
- Treatments are generally aimed at either immunosuppression (corticosteroids, interferon, glatiramer acetate, cyclophosphamide, newer biologic immune modulators) or symptom relief (stimulants for fatigue, muscle relaxants for spasticity, etc.).
- Progression of disability is highly variable, but is slow in most patients.
- Life expectancy is 83% of the general population's life expectancy, with mean age of death of 58.

Modern Physiology:

**MS and The Mind:**
- 40-70% of patients with MS demonstrate behavioral changes.
- Up to 2/3 of patients exhibit affective disturbances.
- 34-65% of individuals with MS develop cognitive impairment.
- MS can cause significant social dysfunction—divorce rates are twice the rate of the general population.
- Diagnosis of psychiatric disorders in patients with MS can be difficult due to overlap between neurological symptoms of MS and clinical criteria for psychiatric disorders (such as fatigue, sleep disturbance, appetite changes, difficulties with concentration, etc.).
- The increased rates of psychiatric disorders in the MS population may result from a combination of the emotional impact of the disease and its resulting disability, the physical changes in the CNS, and/or the side effects of some medications used for treatment of the disease.
Down Syndrome:
Clinical Features, Management, and Special Considerations

Epidemiology:
- 1/1000 live births
- Increasing risk with increasing maternal age
- Increasing risk with increasing paternal age???

Genetics:
Trisomy 21 can happen from 3 different cytogenetic abnormalities:
- Nondisjunction (94% of cases)
- Unbalanced Robertsonian translocation (3-4%)
- Mosaicism (2-3%)

<table>
<thead>
<tr>
<th>Trisomy 14:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midline defects (face and forebrain): holoprosencephaly, microcephaly, seizures, severe MR, severe eye defects, cleft</td>
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<thead>
<tr>
<th>Trisomy 15:</th>
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<tbody>
<tr>
<td>MR, hypertonia (scissoring), delicate facial features, clenched hands with overlapping digits, rocker bottom feet</td>
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<table>
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<tr>
<th>Trisomy 16:</th>
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<tbody>
<tr>
<td>brachycephaly, epicanthal skin folds, Brushfield spots, upslanting palpebral fissures, protruding tongue, flat nasal bridge, folded/dysplastic ears, narrow palate, short neck, brachydactyly, clinodactyly, transverse palmar crease, space between first and second toes, MR</td>
</tr>
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</table>
### Health Supervision for Patients with Down Syndrome

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendations</th>
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<tbody>
<tr>
<td><strong>Growth</strong></td>
<td>- Measure at all health supervision visits</td>
</tr>
<tr>
<td></td>
<td>- Watch for obesity or excessive weight gain (e.g., hypothyroidism) or loss (e.g., celiac disease)</td>
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<tr>
<td></td>
<td>- Promote physical activity and caloric intake less than generally recommended for age</td>
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<tr>
<td><strong>GI</strong></td>
<td>- Evaluate for GI abnormalities at birth (duodenal atresia, imperforate anus, TE fistula)</td>
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<tr>
<td></td>
<td>- Screen for celiac disease beginning at age 2</td>
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<tr>
<td></td>
<td>- Remain aware of increased risk of Hirschsprung’s</td>
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<tr>
<td></td>
<td>- Screen for feeding difficulties/aspiration risk</td>
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<tr>
<td><strong>Pulmonary/Sleep</strong></td>
<td>- Screen for obstructive sleep apneas at all visits after 1 year of age</td>
</tr>
<tr>
<td><strong>Endocrine</strong></td>
<td>- Thyroid function tests at birth, 6 months, 12 months, and then annually</td>
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<tr>
<td></td>
<td>- Monitor for type 1 diabetes</td>
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<tr>
<td><strong>ENT</strong></td>
<td>- Hearing screen at neonatal visit (BAERs and otoacoustic emission if necessary) and evaluate every 6 mos. until age 3 and then annually</td>
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<tr>
<td><strong>Ophthalmology</strong></td>
<td>- Full assessment to monitor for strabismus, nystagmus, cataracts before 6 months</td>
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<td></td>
<td>- Assess acuity at least every 2 years until age 5 and then annually after age 5</td>
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<tr>
<td></td>
<td>- Screen for keratoconus and lens opacities yearly after age 5</td>
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<tr>
<td><strong>Cardiology</strong></td>
<td>- Echocardiogram at birth to monitor for CHD</td>
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<td></td>
<td>- Periodic evaluation for mitral valve prolapse and aortic regurgitation in adolescence/adulthood</td>
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<tr>
<td><strong>Hematology</strong></td>
<td>- CBC with differential at birth (myeloproliferative disorders/polycythemia)</td>
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<td></td>
<td>- CBC annually between 13 and 21 years to monitor for abnormalities</td>
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<tr>
<td><strong>Orthopedics</strong></td>
<td>- Monitor calcium and Vitamin D intake and supplement if necessary (osteoopenia)</td>
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<td></td>
<td>- Spine radiographs to monitor atlantoaxial instability between 3 and 5 years OR Annual neurologic evaluation for evidence of spinal cord compression (Special Olympics requires neck radiographs)</td>
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<td></td>
<td>- Screen for other orthopedic disorders</td>
</tr>
<tr>
<td><strong>Dental Hygiene</strong></td>
<td>- Encourage good hygiene and dental visits every 6 months</td>
</tr>
<tr>
<td><strong>Dermatology</strong></td>
<td>- Screen for skin disorders, especially in adolescence (folliculitis is most common)</td>
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<tr>
<td><strong>Education</strong></td>
<td>- Screen to ensure appropriate services and supports are in place</td>
</tr>
<tr>
<td><strong>Behavior/Psychiatry</strong></td>
<td>- Screen for psychiatric/behavioral disorders, especially ADHD, conduct disorder, depression, autism, and aggressive behavior</td>
</tr>
<tr>
<td><strong>Sexuality</strong></td>
<td>- Address puberty and sexuality in adolescent visits (including menstrual hygiene, PMS, etc. for females)</td>
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<tr>
<td></td>
<td>- Provide information about contraceptive options to females</td>
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<tr>
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<td>- Screen for sexual abuse, particularly for females</td>
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Nephrotic syndrome - chronic management

**Definition:** heavy proteinuria (albuminuria greater than 3 g/24 hours), hypoalbuminemia (less than 3.0 g/dL), and peripheral edema. (Normal urinary protein excretion is less than 150mg/day)

**General pathogenesis:** the normal glomerulus blocks protein filtration with physical and electric forces (GAGs repel anionic proteins). Albumin primarily blocked by the latter. The destruction of podocytes is a major cause of increased permeability. There is early evidence for an antibody-mediated mechanism.

**Major causes:** The majority (50-75%) are due to primary disease of the glomerulus. Certain systemic diseases can also cause this picture:
- Primary causes vary by age; in kids think Minimal Change until proven otherwise; in the elderly think membranous glomerulonephritis

<table>
<thead>
<tr>
<th>Relative frequency of primary glomerular diseases causing nephrotic syndrome (%)</th>
<th>Adults &lt;60 yrs</th>
<th>Adults &gt;60 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal Change</td>
<td>76%</td>
<td>20</td>
</tr>
<tr>
<td>Focal Segmental glomerulosclerosis</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Membranous glomerulonephritis</td>
<td>7</td>
<td>40</td>
</tr>
<tr>
<td>Membranoproliferative glomerulonephritis</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Other diseases</td>
<td>5</td>
<td>18</td>
</tr>
</tbody>
</table>

*Lewis, EJ "Management of Nephrotic Syndrome in adults" as cited in NEJM volume 338, no 17.*

- Secondary causes include diabetes (most common), lupus and amyloidosis
- Most glomerulopathies can be asst with malignancy, especially membranous glomerulonephritis; important to keep this in mind with elderly patients

**Symptoms/presentation:** Patients might be asymptomatic, or might present with classic edema (periorbital, b/l LE, ascites, even anasarca). Heavy proteinuria will result in “frothy urine.” Patients might also have a severe hyperlipidemia on routine physical.

**Diagnosis:** 24-hour urine is the gold standard
- Easier way to diagnose is the **protein-to-creatinine ratio** (mg/mg) on a random urine specimen; the ratio is roughly equal to the g/24 hr
- Urinalysis will show protein and **Maltese cross** under polarized light due to lipid
- Urine tests/serologies to determine cause: ANA, complement, protein electrophoresis, RPR, HBV/HCV, cryoglobulins, ASO
- **Renal biopsy** is indicated in adults to determine specific cause

**Clinical implications:**

**Edema:**
- Previously thought to be due to “underfill” – lose albumin → decreased oncotic pressure and loss of fluid from vasculature → activation of renin-angiotensin and aldo → fluid overload; but patients usually have a *normal plasma volume* and ANP is up (which occurs in hyper not hypovolemia)
- FSGS relapse patients show sodium retention before hypoalbuminemia, suggesting sodium retention is primary; appears to be mainly distal resorption
- Key danger of nephrotic edema is hypovolemia in early stages (when sodium resorption/albumin excretion is off balance)
- **Treatment:**
  - Low sodium diet (<3g per day)
  - Diuretics; furosemide and thiazide combination is effective; *need higher Lasix doses due to hypalbuminuria*
  - Albumin infusion if symptomatic hypovolemia (concern re. pulmonary edema/HTN)

**Hyperlipidemia**
- ↑LDL/IDL/VLDL with or without ↑TG; HDL generally normal
- Over 80% percent of patients with the nephrotic syndrome also have LDL cholesterol levels greater than 130 mg/dL
- Elevated levels of apolipoprotein B due to overproduction (liver protein production increased) and decreased catabolism (unclear why – likely an enzyme lost in urine)
- Treatment: correction of nephrotic syndrome, also soy protein diet (25-30 percent reduction in lipids), statin (decreased total cholesterol by 31 to 33% with simvastatin); ACE inhibitors also shown to decrease cholesterol (9% in one small study)

**Hypercoagulability**
- 50% of patients have a thromboembolic complication
- Venous > arterial
- Due to low levels AntiThrombin III, plasminogen, increased fibrin, increased platelet activity
- Key complications:
  - Stroke, PE, DVT, MI (RR 4.4)
  - Renal vein thrombosis, which is particularly common in membranous glomerulonephritis; symptoms include flank pain, hematuria, large kidney
  - Prophylactic anticoagulation? Possibly for high risk patients (serum albumin <2.0g/dL)
  - Known chronic asymptomatic RVT? Idea is to prevent PE, but no evidence that this works
  - Known symptomatic RVT, PE, DVT: heparin then warfarin for 6-12 months; note heparin may be less effective given low ATIII levels

**Infection:** low levels of IgG leads to susceptibility. Consider pneumo, influenza vaccines

**Low binding proteins**
- Affects absorption of metals (iron, copper, zinc), vitamins (especially D)
- Affects levels of thyroid, corticosteroids (though little evidence of clinical sign)
- Drug binding – prednisolone, warfarin and other drugs need to be watched carefully

**Treatment:**
- Treat underlying cause: Some responsive to corticosteroids (e.g. minimal change) and/or immunosuppressants (FSGS, MGN)
- Reduce proteinuria:
  - ACE inhibitors/ARBs: *requires one month of treatment before effect peaks*; only partly explained by lower BP
  - Low protein diet? Not worth the risk of protein malnutrition (top cause death in ESRD), but low-fat soy protein diet still works well (0.7 g/kg/day)
- Hyperlipidemia: Statin plus ACE/ARB; little evidence that diet helps (other than soy)
- Anticoagulation: consider ASA or dipyridamole (some evidence it might help for proteinuria too); heparin/warfarin only if known thromboembolic event

**Sources:** UptoDate online
Appel, G. “Improved Clinical Outcomes in Nephrotic Syndrome.” Cleveland Clinic, Feb 2006.
Looking for some more support?

Clerkship year can be stressful, but always remember that you are not alone!
Penn has many resources available to you:

Suite 100:
- Director of Student Affairs: Barbara Wagner
- Registrar: Helene Weinberg
  - If you haven’t figured it out by now, Barbara and Helene are two of the most generous, helpful people that you will ever meet. Even if you think your question or concern has nothing to do with the Registrar or Student Affair’s offices, these two amazing women will always give you the time of day and go out of their way to help you out. Never be shy!
- Dr. Jon Morris (aka JoMo): JoMo is one of your biggest advocates. For such a big boss, he’s easily accessible and he can be especially helpful for bigger picture concerns about performance in school and regarding residencies and beyond.
- Tutors: If in need of extra help on specifics like Shelf exams or writing H&P’s, there are often tutors available through Suite 100. Contact Barbara to set this up.

Organized counseling:
- Counseling: CAPS: [http://www.vpul.upenn.edu/caps/](http://www.vpul.upenn.edu/caps/): Over 3,200 students at the University of Pennsylvania use this every year. For a 9-7 pm (open until 7pm Wednesday and Friday, until 5pm other weekdays) appointment: 215-898-7021. For after hours/weekends: 215-349-5490.
- Therapists in the community (Barb from Student Affairs can provide names and contact info)
- Paired mentoring: Join SNMA, LMSA, Elizabeth Blackwell Society for peer mentorship opportunity. Also, reach out to your house mentors. They are your advocates!

Other people to turn to:
- The Gold Humanism Society: Penn Chapter: You can reach out to Dr. Katie Margo, the faculty advisor, Barbara Wagner or any of your peers in this group. Among the Gold Humanism Society’s many goals include supporting students throughout their clerkship year. They want to take an active role in improving the emotional and humanistic components of medical school (for both you and your patients), so please contact them with any specific concerns or ideas.
- Doctoring preceptors.
- Advisory deans.
- Clerkship directors (it’s really ok to talk to them!)
- Mentors you have connected with in pre-clinical years (through clinics, volunteering, etc)
- Don’t forget how important friends and family are outside of medicine. Don’t exclude them from what can be a very busy, emotional but rewarding world. Share your good and bad days with them.

***Put together by the Gold Humanism Society***