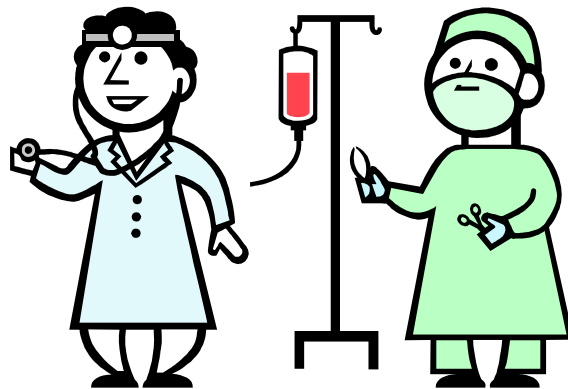


**University of Pennsylvania  
School of Medicine**

**SURVIVAL GUIDE TO THE CLINICS**



**January 2011**



## **Introduction**

Your current 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. 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 incredibly 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. Rather than attempt to describe the specifics of every 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 upper-classmen should 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, maintain enthusiasm, curiosity and integrity, you will certainly be successful and have fun.

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Best of luck,  
AOA Class of 2011

## Helpful Hints

- Being a team player is as important as a strong fund of knowledge.
- Stay organized.
- Don't be afraid to ask for help.
- Don't be afraid to ask questions.
- Be friendly to nurses and clerks—they can teach you a great deal about your patients and about how things are done in the hospital.
- Be concise but complete.
- Be assertive but not obnoxious.
- Take some time to learn your way around the different parts of the patient chart early on. Do the same with the computer system.
- Always be prepared and on time for rounds. Know your patients well.
- 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 aren't always intended to evaluate you, but often to provide a starting point for teaching.
- Ask for feedback midway through the course 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 intentionally show up a classmate—news travels fast
- Don't spend too much time on MedLine/OVID/Pubmed searching for the most recent articles. Concentrate on the basics.
- Consult your classmates. They are your greatest resource.
- Don't worry about your grades compulsively. They should not be your primary motivation in the clinics. Relax, smile and laugh naturally. An easy-to-get-along-with, interested, and enthusiastic student will do well.
- When in doubt, just focus on doing things that will help your patients.
- 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 almost 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. Soandso if you feel nervous. With attendings, always start with Dr. Soandso, but if they tell you to call them by their first names feel free to do so.**

**Intern:** The intern, also known as a PGY-1 (post-graduate year 1), is in his/her first year as an MD 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 chiefs 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. The resident evaluation is a major component of the medical student grade, along with the attending evaluation.

**Fellow:** After having completed residency training in a general field, these individuals are pursuing specialty training as clinical fellows. For example, after completing 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.

**House Staff:** All physicians in training are collectively referred to as house staff/house officers.

**Extern/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. The Extern technically is an additional student member of the team, whereas a Sub-I takes the place of an intern on a team.

**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.

**Team:** The team includes all of the previously mentioned individuals and *you*. The importance of working as a team is paramount. It allows work to be completed smoothly and efficiently, provides more time for teaching, creates a more enjoyable environment, and provides for the best care of patients.

### **Other Important People:**

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. While you may think they're being excessively critical or suspicious of you at times, it's only because they've seen students make the same mistakes over and over again throughout the years. You'll have to earn the benefit of the doubt. Be comforted by the fact that everyone ultimately has the patients' best interests at heart.

**Nurses:** Nurses are in charge of overseeing the routine, yet 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 primary care physician. Nurse's Aids (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.

**Ward Clerk:** 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!

**Physical Therapy (PT):** 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.

**Occupational Therapy (OT):** Occupational therapists also deal with physical dysfunction, but their goal is to help patients (many of whom have cognitive impairments) achieve independence in daily activities through exercise, fine motor skill repetition, and family education.

**Respiratory:** Respiratory techs go throughout the hospital to administer nebulizer treatments, perform bedside PFTs (pulmonary function tests), and adjust ventilator settings.

**Social Services:** 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 MDs and registered dietitians (RDs), nutrition addresses patient care issues such as intravenous nutrition, special diets, cachexia, etc.

**Chaplaincy:** Most hospitals, including HUP, offer this service, which provides inpatients (of most denominations) with worship services and spiritual counseling.

## **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. You will undoubtedly experiment with different systems and will slowly adopt elements of your residents' and fellow students' practices.

Most students and residents use printed copies of the day's signout, accessed from Sunrise, to take notes on pertinent information for the patients they are following. 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. You can find some examples of these forms on the MSG website under "Clinics" in the Digital Archives. Whichever method you choose, you should be able to access the following patient information within seconds:

- Patient name, medical record number, room number, date of birth and admission date. You should also write down the last four digits of the social security number if rotating at the VA.
- Code status.
- Chief complaint and brief HPI.
- A list of active medical problems and planned management.
- Results of relevant labs, cultures and diagnostic tests. These will accumulate quickly, but you should record them in a table, as trends will be important. You will be expected to have all of your patients' lab results easily accessible.
- Medications: Be sure to include dosages, start/end dates (especially for antibiotics), time of most recent dose of any pain or fever controlling medication, and use of any PRN medications.
- Daily vitals, I/O (intake/output), etc.
- Pertinent findings on exam.

## **Rounds**

Regardless of the specialty, all of your clinical rotations involving the care of inpatients will involve rounds. Rounds take many different forms but, most simply, 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. For example, during your rotations in medicine and pediatrics, you will "pick-up" individual patients admitted on your call night. You will be most involved in the care of these patients throughout their hospitalization, and these will be the patients you follow and present on a daily basis 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.

*The following 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.*

### **Pre-rounds**

On most services, you will begin a typical day “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. This includes:

- Checking current vital signs: temperature at the time (T<sub>current</sub>) and maximum temperature overnight or over the past 24 hours (T<sub>max</sub>), 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’s & O’s) over the previous 24 hours, weight if appropriate, drainage from any surgical drains/chest tubes, finger stick blood glucose, etc. In most hospitals, all of this data is summarized on one sheet of paper in the chart. This “flowsheet” can be a bear to navigate at first, but you’ll quickly learn how to draw out the information you need, even on patients in the unit. 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”).
- Review any new progress notes and orders in your patient’s 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.
- 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.)
- Check pending labs, cultures and diagnostic tests.
- Talk with the patient about any problems overnight, changes in their symptoms, new complaints, etc. This is important, as much of the day’s treatment plan is based on the patient’s subjective report.

- 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).

This list seems exhaustive at first, and it will probably take a couple weeks before you feel entirely comfortable with the process. 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 a half 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/Resident 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. Work rounds are usually done as "walk 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 60 year-old gentleman with CHF (congestive heart failure) admitted two days ago for rule out MI. He reports no new problems overnight. His breathing is reportedly "better" although still not back to baseline. He denies any new chest pain, palpitations, or diaphoresis. He is afebrile now with a  $T_{max}$  of 99.6°, BP 130/90 and stable, pulse in the 80s, respirations 14 -16, and pulse ox of 96% on 4L oxygen by nasal cannula (NC). I's and O's yesterday 1500 cc/2400cc for net 900cc negative. On exam, his JVD is down to 8 cm. Unchanged bibasilar crackles and 2+ pitting edema of the lower extremities. Cardiac enzymes and EKG are pending. Plan is to increase his dose of Lasix and repeat chest x-ray (CXR) today.*

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. These rounds provide an opportunity for the team to present and discuss old and new patients with the attending. Brief follow-ups on old patients often begin with a bullet presentation, such as: *“M.W., our 45 yo with h/o (history of) CABG (coronary artery bypass grafting) admitted 2 days ago with CHF (congestive heart failure) exacerbation, continues to diurese well on Lasix with improving pulmonary exam.”* The structure of presentations on old patients is entirely attending dependent, but it is advisable to start with a more formal presentation even if the interns say something more like “MW is unchanged”. In addition, this is your time to present the complete H&P on patients you helped admit on call nights. You will likely have discussed your patient with the admitting resident the night before and may have had some opportunity to go over the case on work rounds. Many interns 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 month. This is often your only contact with the attending, and a well-rehearsed presentation will make a great impression. This is definitely something that gets easier with each presentation. Do not sacrifice completeness early on because you feel compelled not to read from your 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.

You should have read enough about your patient’s disease the night before to be able to answer the majority of questions that your attending will inevitably ask. Don’t worry about this too much. Read for your own education and understanding with some anticipation of likely questions, and you’ll do very well. Consider differential diagnoses, presentation, clinical course, treatments and prognoses. 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. 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. This is somewhat of a convention. Have fun with the whole pimping process. 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

In addition to attending mini-lectures given by senior members of the team on topics relevant to the care of patients on your service, you will also 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 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:

- 1) Try to pick a topic relevant to either a patient you are following or another patient on the service.
- 2) 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).
- 3) Start with a 2-3 sentence presentation of your patient.
- 4) Cover the BASIC epidemiology, pathophysiology, clinical presentation, and diagnosis.
- 5) Include a discussion of one or a few relevant papers. You can find papers of interest by doing a Pubmed search for your key terms.
- 6) Have this information on a one-page handout (one-sided or two-sided). Feel free to have almost all of what you are going to say on it or an outline from which you will add information from memory. Check out some example handouts from past AOA students in the "Sample Documents" booklet.
- 7) In general, UpToDate is extremely useful for the basic facts of your presentation and the reference list from UpToDate articles can be very useful. However, it is always good to do a Pubmed search if possible to find a few original articles of interest or just a great review article.

## Call

Because inpatient medical and surgical services have patients in the hospital all day, every day, members of the team must be in the hospital *at all times* to care for these patients. At the end of the day, when the rest of the team goes home, someone has to stay overnight. During these nights (known as call), house officers have responsibility for admitting new patients to the hospital and taking care of medical issues on old patients that can't wait until morning. 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 can be 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. 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 an MD, 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 "*MS Progress Note*") and after your signature at the end of the note.

### **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 Documents" booklet.

#### **H&P Format:**

Patient Name:            MR Number:  
Date:                      Time:  
Source of Hx: Patient, Family, Old Records, etc.

**CC:** "In patients own words"

**HPI:** Begin by listing all relevant major medical problems in your first sentence (*i.e.*, *Mr. M is a 45 y.o. WM with a hx of NIDDM, CAD, PVD, CRI who presents with ...*). Describe all episodes and conditions leading up to and relevant to the reason for admission. Include



pertinent positives and negatives from the review of systems. If multiple problems are present discuss them one at a time. Give attention to the duration, intensity, location, radiation, quality, onset, etc. of sx (symptoms). Include a brief synopsis of what was done in the ER, by the EMTs, at the OSH (outside hospital) prior to transfer etc. before the patient came to the floor, such as diagnostic tests and results, medications, fluids given and response. All PMHx relevant to this admission should be detailed, including admissions, ongoing treatments, etc. A chronological structure to the HPI is preferred by most attendings, so try to organize things by when they happened.

**PMH:** Describe major illnesses (childhood & adult) with a brief discussion of duration, treatment, and control: *e.g., rheumatic fever, HTN x 10 yrs. well controlled with meds, s/p CVA '91 w/ residual left sided weakness.*

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 memberse.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 here

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:

**ROS:** Be complete for medicine. Pertinent positives and negatives are usually 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.

General: B/L = bilateral; c/ = with; s/ = without; NT = non-tender.

### ***Write-up***

**VS:** T: 98.6°F, RR: 12,  
HR: 65 BP: 120/80  
(sitting), Pox 100% on RA.

**General:** WD/WN male in  
NAD, resting comfortably  
on exam, appears stated  
age, pleasant and  
cooperative, AAOx3.

**H:** NC/AT; (–) temporal  
wasting.

**E:** Conjunctiva pale; (–)  
scleral 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 5<sup>th</sup> intercostal space.

### ***Notes & Translation***

VS = vital signs; Pox = pulse-  
ox; RA = room air (or O<sub>2</sub>  
@...); may also include supine  
BP/HR (orthostatics).

WD/WN = well developed,  
well nourished;  
NAD = No acute distress;  
AAOx3 = awake, alert, oriented  
to person, place and time.

H = head; NC/AT =  
normocephalic/atraumatic;  
note any lesions/rashes.

E = eyes; EOMI = extra-  
ocular muscles intact;  
PERRLA = pupils equal, round,  
reactive to light &  
accommodation.

E = ears; TM = tympanic  
membrane; LR = light reflex;  
d/c = discharge; B/L = bilateral.

N = nose; NT = non-tender; s =  
without.

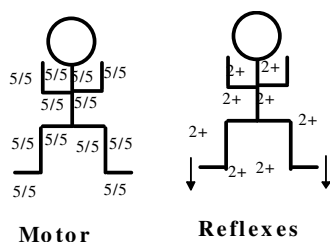
T = throat; MMM = moist  
mucous membranes.

ROM = range of motion; LAD  
= lymphadenopathy (cervical);  
JVD = jugular venous  
distention.

CTA/P = clear to auscultation  
& percussion; W/R/R =  
wheezes /rales/ronchi.

RRR = regular rate & rhythm;  
S1, 2, etc. = 1st, 2nd heart  
sound; M/R/G =

	murmur/rubs/gallops; murmur should be characterized with intensity, location, radiation; PMI = point of maximum impulse.
<b>Abd:</b> Soft, NT/ND; (–) HSM; (–) masses; (–) bruits (aortic or renal B); (+) BS; (–) CVA tenderness	NT/ND = non-tender/non-distended; HSM = hepatosplenomegaly; BS = bowel sounds (listen for BS before palpation); CVA = costo-vertebral angle.
<b>Ext:</b> Warm/well perfused; (–) C/C/E; 2+ radial, DP/PT pulses B/L; cap refill < 2 sec	C/C/E = cyanosis, clubbing, or edema; DP/PT = dorsalis pedis/posterior tibialis; cap = capillary. Comment on joints, etc. if pertinent.
<b>Skin:</b> Clear; unbroken; (–) rashes; (–) hypo/hyperpigmented areas; nl turgor.	
<b>GU:</b> (–) vaginal (penile) d/c; (–) rash/lesions; (–) testicular masses; (–) inguinal hernia	d/c = discharge. Much more complete female GU exam in GYN.
<b>Rectal:</b> Good sphincter tone; prostate NT, not enlarged; brown heme (–) stool; (–) polyps/masses	
<b>Neuro:</b> 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.	MS = mental status; CN = cranial nerve; RAM = rapid alternating motion. 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:

**Panel 7 / Lytes**

Na	Cl	BUN
K	CO <sub>2</sub>	Cr

**CBC**

WBC	Hgb	plts
	Hct	

**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. Don't worry—your resident will almost always go over this with you the night before when you are on your 200 rotation!

Signature  
Print name, MS II  
Phone number

***Progress Notes***

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, CHOP 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.

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. 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 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

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 (*e.g. Gentamicin day 7/14*).

### **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.

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  
Pager 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.

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), 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 in stable condition.*

Signature  
Print name, MS II  
Pager number

### **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 the other

students (*and* the intern) and it's a good way to learn to anticipate possible post-op complications. Use a modified SOAP 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, 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  
Pager 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):

On (delivery date, time), this (age, race, gravida\_\_\_\_, para\_\_\_\_, 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 = \_\_\_\_\_. (Patient taken to recovery room in stable condition.) Infant taken to newborn nursery in stable condition. Dr. \_\_\_\_\_ attending.

Signature  
Print name, MS II  
Pager number

## Post-Partum Notes

You will undoubtedly be asked to write post-partum notes while rotating on the labor and delivery service, usually for the patients for whom you participated in the delivery. 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 day #\_\_\_\_\_

**S:** 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.

**O:** - Vitals (BP, pulse, respirations, temperature)

- Ins/Outs (IV fluids, PO intake, emesis, urine, stool)

- 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)

Signature

Print name, MS II

Pager number

## Orders

An MD 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, and you'll find that it's usually pretty easy. 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 an MD, and do admission orders once or twice first with an intern or resident before doing it on your own.

### **Prescription Writing**

Prescriptions should be written on an appropriate prescription pad or printed from sunrise. Controlled substances, including narcotics and benzodiazepines, can only be prescribed by physicians with a DEA license (usually upper level residents, fellows, or attendings) and are usually written on a special prescription pad.

Patient's name:                      Date:  
Drug name: *Bupropion SR, 150 mg.* (don't forget to include concentration or strength)  
Sig (instructions): *1 tab po BID*  
Disp (dispense) : *# 60 (sixty) tabs*  
Refills: 3

### **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. *Maxwell Cards* for quick reference for normal lab values, standard forms for notes, etc.
4. 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. PDA w/ Epocrates or Tarascon's *Pocket Pharmacopoeia*: this tiny, relatively inexpensive book has almost every medication with dosing guidelines. Invaluable for learning to write prescriptions and orders.

#### **Also useful:**

7. Jay Sanford's *Guide to Antimicrobial Therapy*
8. Scissors (especially for surgical rotations): a great source are the disposable suture kits in the Omnicell. The huge trauma scissors are great for taking down dressings.

9. Tape, gauze, gloves, ABG kits, lubricant, hemocult cards, tourniquets, etc. (somehow these things find their own way into your pockets so don't worry too much about collecting them).

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. Carry things that make you comfortable. If you'll feel better knowing you have a table of normal lab values in your coat pocket, definitely put one in there. 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.

### Phlebotomy

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:

Laboratory	Tube color	Assays
Blood Bank**	1. Red	1. Blood group Ag-Ab ID, Cross match
	2. Lavender	2. Direct Coombs
Chemistry	1. Red	1. Electrolytes
	2. Lavender	2. Hgb A1C
Coagulation	1&2. Blue	1. PT, PTT and other clotting assays
Hematology	1. Lavender	1. CBC
	2. Green	2. Hgb electrophoresis
Immunology	1. Red	1. Specific serum Ab detection
	2. Lavender	2. Cell surface phenotype
	3. Green	3. HLA type
Molecular Dx	1. Lavender	1. PCR and DNA analysis

Toxicology /	1. Red	1. Drug/hormone levels
Endocrinology	2. Lavender	2. Cyclosporin Levels

*\*\* 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 is 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.*

Your skill in phlebotomy will definitely improve with practice. 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 if you ask nicely enough for them to take pity on you). No one will be upset with you, honestly, and you'll learn from others' approaches. You will particularly want to get permission and/or supervision for femoral or arterial draws if they are going to be necessary. Also, don't resort to asking the patient if they know of any good veins you could try next. It makes them uncomfortable.

### **Paging/Cellular Phones**

At the time of writing, the plan was to no longer issue pagers to medical students. This was recommended by your predecessors, who found the pagers pretty useless in a hospital where cell phones are increasingly the only mode of communication. However, if you do not have a cell phone, you can contact Suite 100 to rent a pager during the clinical years. Make sure your team has a way to get in touch with you at all times in the hospital.

## **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 appropriately be given to you on the first day of every rotation.

### **Internal Medicine/Family Medicine**

The 12-week medicine block is broken down into 8 weeks of inpatient medicine and 4 weeks of family medicine. Your inpatient experience will take place at HUP, Presbyterian Hospital, Pennsylvania Hospital, or the VA (often a combination of two of these sites) and will vary somewhat according to site. There are pros and cons to each site; however, the general “rules” remain the same at all of them, and historically this is the only rotation where students do not have a say in their site. Dr. Jen Kogan will give you a detailed overview of exactly what is expected of you during your inpatient medicine block on the first day of your rotation. In short, 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 that most students really enjoy, regardless of what they plan to go into. During this time, you will see patients of all ages and with a large variety of concerns, from children needing well-child care, to pregnant patients, to the elderly.

### **Inpatient Medicine**

#### **The Team:**

There are several different team structures and organizations. Some teams are broken down into two hemi-teams with one attending. In this case, each hemi-team has its own supervising resident, as well as two interns or one intern and one sub-intern, and one or two medical students (i.e. VA, Presby A/B). Other teams have 1 attending, 1 resident, and 2 interns (or 1 intern and a sub-intern) (i.e. Martin), and one or two medical students. Geriatrics has one attending with four residents.

- *Medical students:* There are usually one or two medical students per team. Generally each student works with his or her own intern.
- *Sub-I:* This is a 3<sup>rd</sup> or 4<sup>th</sup> year medical student doing an advanced elective in medicine. S/he functions exactly as an intern does on the team. Sub-I’s carry their own patients

(approximately 10 patients) and interact directly with the senior resident. 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:* This is a first-year medicine resident, a rotating resident from another specialty (such as Family Medicine or Emergency Medicine), or a resident who is doing one year of medicine before entering another specialty such as radiology or dermatology. Interns will carry all the team's patients that are not covered by sub-I's. You will interact very closely with your intern and will carry patients with him or her. 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 patient well-being and will have to cosign all of your orders. Your intern isn't grading you directly, but having a good relationship with them is essential for doing well on your medicine rotation. Help them out however you can, and you will be appreciated.
- *Supervising residents:* Each team will be supervised by a 2<sup>nd</sup> or 3<sup>rd</sup> year medicine resident (JAR—Junior admitting resident, or SAR—Senior admitting resident, respectively). Your JAR/SAR will not carry any patients directly but will instead oversee care for patients directly covered by you, your intern, and your sub-I. Most JARs/ SARs will also give you frequent, informal teaching sessions, and will work with you to improve presentations and clinical skills.
- *Attendings:* These are faculty who oversee the care of all the patients covered by the team. You will round with them each day (usually sitting rounds). During this time, you will present new patients in full, as well as giving a brief overview of the care of known patients. Rounds will also usually consist of formal teaching by the attending. At some sites, you may occasionally cover patients who are cared for by a "private" attending. This is an attending who has admitting privileges to a certain hospital, but is not necessarily part of the Penn faculty. If this happens, you will care for the patient on a daily basis, but will not discuss that patient in rounds with your attending; rather, the private attending will read your note each day to determine what has happened with the patient. S/he will then leave a note guiding the patient's care. This exchange of notes replaces formal discussion during rounds. This situation isn't ideal, as you have to do the work without the benefit of attending teaching (or face time for evaluation by your "real" attending), but your resident may want you to pick up a private patient if the case is interesting or a good learning experience. Almost all of the "private attendings" do not mind discussing their patients with you, and you can page them to ask them questions about the patient and/or discuss the case.

### **Your responsibilities:**

As a part of your team, you will be responsible for carrying 1-4 patients at all times (usually 2-3). "Carrying" a patient implies that you "picked-up" the patient during a call night (or occasionally picked up a patient who came in overnight and was seen by the night float team) and presented him/her in rounds the following day. For each patient you are carrying, you will see the patient daily prior to rounds, write daily progress notes, discuss the case daily in rounds, read up on the patient's chief complaint, write daily orders, and prepare the patient for discharge.

- *Picking-up a patient:* You will usually take call every fourth night (see below) with your team or during your shifts if you are on the hospitalist service. During this time, your JAR/SAR will be paged by the emergency department when new patients need to be

admitted. S/he will divide the patients between your intern(s) and/or your sub-I. You are expected to pick up 2 patients per call night (although in the beginning you may only be asked to pick up 1 patient), with your intern. After that, your intern will usually pick the patients up without your help. You will work with your intern to admit your 1-2 patients; as your rotation goes on, you will do more and more of this yourself, but in the beginning, your intern will help you. Before you go to see your patient, check in with your intern. 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. When you are given your patient assignment by your JAR/SAR, you will go either to the emergency department or to the patient's room, if s/he is already on the floor. Before seeing the patient, you should read through the chart, review ordered and current labs, radiological studies, EKG's, etc. and review Medview for past discharge summaries and/or labs. When you see the patient, take as complete a history as you can (do NOT rely on the history documented in the chart by the emergency dept or anyone else – if you have wrong information on your patient because someone else was incomplete or careless, it's ultimately going to be your fault), and do a complete physical exam. Some patients will have one clear complaint and this process will be simple. Others will have a multitude of medical problems and no clear diagnosis, and admitting them can be overwhelming. Just try to go step by step and take your time. For the most part, there is not a huge rush while you are admitting. 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 or she will help you develop your treatment plan. For practice, try to do this presentation formally, as you will for your attending. 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! Know as much about your patient's history as you can (i.e. make sure you are familiar with all medications and prior diagnoses), and read up on their condition using a textbook as well as UpToDate. You should be ready to present a comprehensive differential diagnosis (although you may not have time in rounds to present the entire list), but you should also take a stand about what you think the most likely diagnosis is and what the plan should be (talk to your intern/resident for help with this!). Many attendings also appreciate if once or twice on the rotation you bring in an article (not from UpToDate) that may contribute to your patient's care (but this is not necessary for every patient—and you will look like a serious gunner if you bring an article for every patient you present...try to limit it to an occasional unusual and/or interesting patient). Medical students also give periodic topic presentations on rounds, and these are often on topics related to your patients. Ask your SAR/JAR for advice on this. Often attendings will ask for these at some point during the rotation, but if something interesting comes up with one of your patients, feel free to offer. These presentations are typically less than 10

minutes and should answer a focused clinical question in an evidence-based manner. If you have a choice about what to present, try to pick something that will help you out for shelf exam studying instead of something so obscure you will never see it again! These presentations are a great way to really learn a topic. See the sample documents for more details on how to approach topic presentations.

- Daily patient care: You will see your patients before rounds every day. You are expected to carry a maximum of 4 patients (and will often carry fewer in the first week or two of the rotation) – if you are carrying too few or too many, discuss it with your senior resident. When you see a patient in the morning, you should find the chart and look for documentation of any acute events overnight, check in with the patient's nurse to be sure you're not missing anything, check labs and radiologic studies, and check for notes left by any consultants you may have called. Check with your intern when you start the rotation to see how they want to deal with morning signouts; it's often helpful if you and the intern can touch base before rounds to go over new information. When you see the patient, document his or her vital signs from the night (these will be documented in a chart at the door of the room or bedside), get a subjective response from the patient on his or her condition, and do a physical exam. Then, 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.
- 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. To be discharged, the patient will need good follow-up from a primary care provider. If s/he doesn't have one, you and your team will help find one. 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, and make sure there are scripts written (you can write these if your resident feels comfortable with it, but they need to be cosigned). Write discharge orders when given permission by your senior resident and a discharge note when appropriate.

### **Call:**

*Note: At the time this book was written, changes were not solidified for the 2011 students, so we are giving you call info for 2010. Dr. Kogan will explain any changes during your orientation day.* For the most part, you will take call every fourth night. Students at Pennsylvania Hospital have a short, medium and long call system, which will be reviewed the first day of the rotation. Students on hospitalist teams will work on a shift schedule. Unless you are on the hospitalist service doing shifts, you should leave the hospital by 10pm on call. You may be sent home earlier if you pick up 2 patients before then. Once you have 2 patients, you are expected to prepare your presentations for the next day and read up on your patients so that you are ready to talk about them in rounds. The day after your call (your post-call day), you and your team will leave the hospital around noon unless you have scheduled didactics (although if you were able to



get some sleep during your call night, there may be times you want to stay for the afternoon if there are interesting things happening with your patients).

Ask your resident about the weekend schedule before your first weekend call day, as this will vary by team. Make sure you know when and where to arrive on a Saturday or Sunday morning. Plan to leave weekends open during your medicine and surgery rotations, as you will not learn your schedule until your first day on service; however, if you know of a special occasion that you must attend, there are ways to manipulate your call schedule by contacting the course administrator (not course director) far in advance of team assignments.

### **Schedule:**

Your schedule will vary depending on your attending and your site. Post-call attending rounds often occur earlier (7:30 or 8 am start); however, this varies significantly by team. Before you meet your team, you need to have seen your patients, collected information, and written your notes. On other days, attending rounds typically begin around 9:00 AM. After attending rounds, you should try to work efficiently to put in orders, call consultants, etc. for your patients. There is usually an intern report at noon (with lunch) which you are expected to attend. After, check in with your intern and resident and continue taking care of your patients. When not on call, your team will sign out to the on-call team between 2 and 5pm, and you can go home. Even if your jobs are done, it's best not to leave until your resident tells you to. If you're just sitting around, find your JAR/SAR and ask what you can do to help. They might send you home, but if they do give you a job to do, you'll help the whole team get out earlier. For the most part, residents are very understanding and don't keep you in the hospital unnecessarily. Some days, you will have classes at the medical school during the day, and you should let your resident know when you're leaving for these (and remind them because sometimes they forget with all the patient issues they are taking care of). If you are not on call, most residents do not expect you to come back after class; however, this may take some hinting on your part.

### **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, you can wear scrubs, but you should still look washed and awake. If you don't stay in the hospital, you are technically not supposed to wear scrubs on your post-call day; however, you can discuss this with your resident, and most medical students do wear scrubs on call and post-call days. You should wear your white coat and ID every day.

### **What to Put in Your White Coat:**

- Stethoscope
- Epocrates/ Pharmacopaeia
- Pocket medicine
- More than one pen, because someone will steal yours and you have to be nice about that
- Some system of notes about your patients, either on the daily signout from sunrise or your own notecard system
- Pen light
- ABG kits

- Wallet/cell phone/etc. (Probably best not to leave these in your bag since your bag often ends up in places that aren't totally secure)

*Optional:*

- Sterile gauze, sterile gloves, tape (all things that could come in handy, depending on the patients you see)

### **Books:**

See book guide at the back for detailed book information.

### **Grading/Assignments:**

*Note: At the time this book was written, changes were not yet solidified for the 2011 students. This is info from 2010, but Dr. Kogan will update you during orientation.* The rotation is graded honors/high pass/pass/low 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. Your shelf exam grade is important (there is a minimum score 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. For an example of a formal medicine write-up done by an AOA student, see the "Sample Documents" packet.

### **Tips for Studying for the Shelf:**

Your first shelf exam will be the hardest, as you will gain shelf-taking skills throughout the year. Some people feel that it's impossible to do well on your first shelf, but this isn't the case at all. 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. Make sure to plan a 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 for your first shelf, do as many practice questions as possible (using PreTest, MKSAP and Step 2 CK questions from a source such as the Kaplan QBook or an online source such as USMLEWorld), as half the battle is learning to do the questions. 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.
- 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 hemoglobin, etc., your team will know that you care and that you're on top of your patients' care. Having said that, if you don't know the answer to one of these questions, be honest. Never make up data – this looks bad and, more importantly, is bad for your patient.

- 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.
- Read up on your patients and, when asked by your attending or resident, prepare topic presentations. These presentations do not need to include PowerPoint (in fact, you will probably look like an unpleasant gunner if you even touch PowerPoint), but a one-page hand out with a pertinent article is appreciated (and gives your attending something with your name on it when s/he is doing your evaluation—attendings frequently mention your presentation in the evals). 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.
- 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.
- 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. It's nice if the two of you can collaborate about when to give presentations, etc. If you're preparing a topic presentation, it's nice to give your fellow student a heads up. The same thing definitely goes for bringing food in—make sure you let your fellow student know if you plan to bring something in for the group (he/she may want to pitch in and bring something too). 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.
- 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. During this rotation, you will have your own patients and will get to apply everything that you've been learning in the classroom for the past 10 months.

#### **What Not to Do:**

- Never act disinterested 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, then your 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 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.

## **Family Medicine**

### **Rotation Structure:**

During your month of family medicine, you will be at a site with anywhere from 0-4 other medical students. Although the physicians with whom you work will have inpatients, 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, 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 complete physical exam. The exception to this is an "acute" clinic that some practices have. This is a clinic that patients present to for acute problems, and some of these may be straightforward. 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. Keep it brief and focused, and use the opportunity to practice presenting without detailed notes or planning.
- 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 to write in the chart, this is all you need to do (be sure to leave some space for your attending to write). 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.
- Topic Presentations: Your attending or resident may ask you to do a topic presentation. If so, you should do it. If not, it's probably not necessary. If you find a great article on an interesting patient, it won't hurt to bring it in, but don't go overboard.

### **Schedule:**

The schedule in most practices is very nice from a medical student's point of view. 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 didactics back on campus every Friday (usually all day)—and these are all required, with

no good way to make them up (you will lose points if you miss any, except in the case of true 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 wearing it.

**What to Put in Your White Coat:**

- Stethoscope
- Epocrates/ Pharmacopaeia
- 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, bandaids, stickers for kids (all of these should be available in the office, but it can be handy to have them in your pocket in case they are not easy to find)

In general, there will be an otoscope/ophthalmoscope in the rooms, and there will probably be other supplies as well (gauze, tongue depressors, etc.). Check out an exam room on the first day to be sure.

**Grading:**

Your performance at your family medicine site will be VERY important in determining your grade – 55% of the grade is from the site evaluations, 25% from the exam, and 10% assignments. The exam that you will take at the end of the block is not a shelf exam, but is a multiple choice exam based largely on online cases that you are expected to work through during the clerkship. 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). Do the online cases and go to lectures, and you'll be fine.

**Tips for Succeeding:**

- Be enthusiastic and friendly. As is true in every rotation, these qualities are invaluable.
- For the most part, the residents and attendings are welcoming, friendly, and want to teach you. Accept their efforts gracefully!
- 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 – doctors, nurses, receptionists, lab personnel, patients, etc. If they're glad you're there, they'll make you glad you're there.
- If you have a PDA, put a couple of valuable programs on it before you start: Epocrates, an antibiotic guide of some kind, a guide to pediatric vaccination schedules. If you don't

have a PDA, keep a medication guide and a pediatric vaccination schedule in your pocket. Being able to look things up quickly will make you a superstar.

- This rotation is fun and fairly relaxing – enjoy it!
- Don't forget to take advantage of the extra time to study for the 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 medicine.

#### **Things Not to Do:**

- As usual, never backstab anyone. These are very friendly people, and they want to see that you are also friendly and a team player.
- Never make jokes or act disrespectful about a patient or his or her medical problems. You will be seeing patients from all walks of life and with every type of concern, and part of being a physician is dealing with this respectfully.
- Never act bored.
- 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.

### **Pediatrics/Obstetrics and Gynecology**

Grouping the pediatrics and obstetrics/gynecology clerkships into a single clinical block facilitates an integrated curriculum designed to present topics from the perspective of both clinical disciplines. 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. The integrated teaching curriculum covers issues such as prematurity, adolescent health, domestic violence and reproductive technology.

### **Pediatrics**

#### **Introduction:**

Pediatrics is a 6-week course in which you will learn diagnosis and treatment of basic 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 rotation that most people enjoy, even if they are not planning a career in pediatrics.

#### **Outpatient**

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 history 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. A key to being successful is being friendly to everyone in the practice, including the receptionists, clerks, and nurses. These are well-oiled practices that go out of their way to include a student, so 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 and half subspecialty patients (either neuro, heme, pulmonary, renal, integrated 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 (3<sup>rd</sup> or 4<sup>th</sup> yr med students doing an advanced rotation)
- 3-4 interns (1<sup>st</sup> yr residents): these will be the people you work most closely with. You may be assigned one intern with whom you will work for the entire 3 weeks. You will share patients with that intern. The interns were just med students a year ago, so they are usually very approachable and fun to work with. They are also usually really tired so they definitely appreciate your help in any way (tracking down lab values, calling primary care docs, etc.).
- 1-2 senior residents (2<sup>nd</sup> or 3<sup>rd</sup> yr residents): the senior residents have a supervisory role on the team. They will often do a lot of teaching for the med students.
- Attending: a faculty physician who oversees the entire team and makes final decisions on all patients covered by the team

The only exception to the above description of the team is the RHT (Resident Hospitalist Team), which is a purely general pediatrics team covered by a small group of residents. In general this service is supposed to have more time for teaching.

### *Other people you will interact with:*

- Teaching senior: a 3<sup>rd</sup> 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.
- Nurses, clerks, respiratory therapists, child life specialists, social workers, nutritionists, physical therapists, etc.

### **Chain of command:**

Always 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.

### **Schedule:**

- 7:00: interns get sign-out from the on-call intern at 7 am. You should be there when your intern gets his/her sign-out so you know what happened with your patients overnight.
- 7:00-8:00: pre-round on all of your patients (including patients you admitted the night before if you were on call). This means getting their vital signs from overnight and finding out if there were any acute events by talking to the on-call resident and the nurses. See all of your patients and perform a focused physical exam. Look up any new lab results and radiology studies. Look for notes in the chart from any consultations you may have called. Write a progress note on all of your patients, including an assessment

and plan so that you are prepared for rounds (standard progress note sheets are available on all floors so you just fill in the blanks—and the format of these sheets often varies between teams, so it's best to get them on your own floor). At CHOP, your admission and progress notes do not typically get placed in the patient charts, but residents and attendings may want to look over some or all of your notes—so make sure they are neat and legible if this is the case.

- 8-11: 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.
- 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. Check with your intern if you should be around for that. If the day is slow, most interns and residents will send you home early.

**What to wear:**

Females: nice pants and a top/sweater, closed toe shoes

Males: nice pants, shirt and tie

Some people do not like to wear a white coat on peds b/c they feel less approachable to the kids. It's up to you. Some people need it for all of the pocket space while others carry a small bag with their books and tools. When on call, your interns wear scrubs, but most medical students do not wear scrubs. You should ask your resident what is appropriate.

**What to put in your white coat (or carry with you):**

- Stethoscope
- Pocket pharmacopeia/Epocrates
- Pocket antibiotic guide
- Pocket medicine (less applicable to Peds than Medicine, but you will still use it)
- Otoscope and tips (Otosopes 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.)
- Pens (always have an extra on hand!)
- Notecards/paper (you should keep all of your patients' lab values close at hand—good to track them on a notecard or sheet of paper... you can use the templates under “Clinics” in the MSG digital archive or make your own)
- Penlight
- Optional: Gauze, tongue depressors, bandaids, stickers
- You may also want to carry around photocopies of tables listing normal vitals for each age group—it can be hard to keep track of what's normal for kids! It may be hard to find these lists though—try looking in Harriet Lane or asking a resident.



**Call:**

You will take call 4 times over the course of your rotation with one call being on a Saturday or 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.

***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 3 patients on peds (and you may start with 1-2 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 resident 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—and, sometimes, you end up being graded only by the general peds attendings (and not the specialty attendings).

**Assignments:**

You will have to write 2 detailed history and physical write-ups during your inpatient rotation. See the “Sample Documents” packet for an example. Students also have to do an Evidence Based Medicine exercise, give case presentations to their classmates, and participate in simulation sessions focusing on pediatric emergencies.

**Didactics:**

You will have Friday didactic sessions on both inpatient and outpatient peds. 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/low pass/fail. The exam is a shelf. Your final grade will be a combination of your shelf score, evaluations from your inpatient and outpatient rotations, your write-ups, and a case conference presentation.

**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 (the yellow BRS peds book has some good 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. Nonetheless, peds is one of the rotations that has a cut-off shelf score to be eligible for an honors 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 rotations than others.

### **Tips for Succeeding:**

- Overall, the key to doing well in this rotation is being enthusiastic. Help out others when you can and take initiative by taking on new patients or bringing in a presentation for rounds. Being friendly with your patients, family members, and all team members goes a long way on this rotation.
- 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.
- 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.
- Be nice to the nurses and clerks.
- 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. Again, keep in mind that sometimes the specialist attendings do not evaluate you—so you may want to stick to general peds topics.
- Help out your interns in any way you can. They will reward you later on by letting you do procedures or sending you home early on slow days. Always ask if there is anything else you can do before you leave for the day.

- Read about your patient's 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. 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.

#### **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.
- Bring in an article every single day. Once or twice is plenty.

## **Obstetrics & Gynecology**

#### **Introduction:**

OB/Gyn is a 6-week rotation where you will have experiences in delivering babies, working in a gynecology clinic and assisting in gynecologic surgeries. Your experience will vary greatly depending on your site, so this guide gives a general overview of the rotation.

#### **The Team:**

- *Interns:* first year residents who are responsible for the majority of the daily work on all of the inpatients. You will usually work most closely with the interns.
- *Residents:* generally have a more supervisory role and spend more time in the operating room and on advanced rotations. At some sites, interns and residents have basically the same role. At least at HUP, you'll find that the third years and chiefs 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 fields like GYN surgery or maternal-fetal medicine (high risk OB). These are people who have completed their residency and are now pursuing a more specialized career. You will probably not work directly with the fellows at most sites.
- *Attendings:* faculty physicians who oversee all of the patients and team members. At some sites you will work with private attendings, who are doctors in the community who admit patients at that hospital.

#### **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 may have the opportunity to write the history and physical exam for patients when they are admitted in labor. You will follow the progress of laboring patients by doing frequent cervical checks (or at least accompanying a resident who will do the checks) 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 get to deliver some babies as well) and then may be asked to write a delivery note. Maxwell's has a good outline of a delivery note, but you can also find an outline on page 22 of this packet. At most sights, you will pre-round and write progress notes every day for the moms you deliver until they are discharged. Maxwell's has a great outline of a post-partum note as well, but there is also an example post-partum note in this packet on page 22. 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 physical exam, and then present your assessment and plan to the attending. You will rarely do the pelvic exam without supervision by a resident, nurse, or attending—as you get more experienced, you may be asked to do pelvic exams without direct supervision from a physician or a nurse, but you should NEVER do them without someone else in the room (there must always be at least a medical assistant or someone there). 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 he/she 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 over the course of the six weeks. 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. Try to read about each patient's problems and planned surgery prior to going to the OR.

**Schedule:**

The schedule varies greatly depending on your site and your rotation. Generally you will be responsible for pre-rounding on all of your patients on L+D or GYN surgery and then presenting them on rounds with the attending. Most sites have daily or weekly conferences that you will attend.

**Call:**

Call varies depending on your site. At some sites, you will do one call per week and then one or two weekend calls. While on call, you will primarily cover labor and delivery. At other sites, there is a nightfloat system. This means that when you are on L and D, you will spend one week on day shifts and another week on night shifts. Most people like this system because there is no other required call or weekends. Typically, however, while at the hospital on night float, you are not permitted to sleep and should not sleep, even if suggested by a resident.

**What to Wear:**

Scrubs on L+D and surgery. For clinic, females should wear closed-toe shoes, a skirt/pants, and a nice shirt/sweater. Males should wear a shirt and tie.

**Books:**

See book guide at the back for detailed book information.

**Grading:**

The rotation is graded honors/high pass/pass/low 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. At some sites, you will be asked to submit a patient write-up and/or do a topic presentation.

**Tips for Studying for the Shelf:**

Your first shelf will be the hardest because it takes a little time and practice to master shelf studying. Everyone has their own style, but general tips for success are to start reading early in the rotation—don't wait until the last week to buy your books, and 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, so it is usually not enough to only know general principles or basics. However, the shelf should not be the only thing you focus on. The majority of your energy should be spent on the rotation itself. You can ace the shelf but get horrible evaluations and you likely won't get honors. But if you get rave reviews from your attendings and only do decently well on the shelf, you will probably still do very well overall.

**What to put in your white coat:**

- Stethoscope
- Pocket pharmacopeia/epocrates
- Maxwell's cards (have a great outline of a postpartum note, etc.)
- 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:* tape measure to measure size of gravid uterus during prenatal visits, gauze, tape, alcohol pads, sterile gloves, lubricant packs (all things they likely have around the clinic or floor, but they can make you stand out if you happen to have them right there in your pocket!),

“Obstetrics, Gynecology, and Infertility” (a red pocket book—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, so try to anticipate how you can be helpful ahead of time. Instead of asking repeatedly “is there anything I do to help?,” try to ask more specific questions or 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. You will be seeing women in very vulnerable situations. Before you jump in on a delivery, you should get to know the patient by going in throughout her labor, performing exams, 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 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 (and it’s very low-risk for the patients even if you are inexperienced). 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!
- Get comfortable doing pelvic exams and checking cervixes early on. If you become competent at this in the beginning, you will be able to participate in clinic and deliveries more, which definitely makes the rotation more exciting.
- 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.
- Ask for feedback throughout the rotation so you won’t be surprised by your evaluation at the end (8 feedback cards are required for the course, and it’s good to spread these out throughout the 6 weeks).
- 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 disinterested 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). This is especially true for men—you can never examine a woman on your own.
- Sit around reading on a busy floor—if the residents are busy, you should be too.
- Back stab your fellow students by taking a delivery of a patient that another student has been following.

## Common OB/GYN Abbreviations

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

## **Psychiatry, Neurology, Ophthalmology, Otolaryngology, Orthopedics**

This clinical block consists of 6 weeks of psychiatry, 3 weeks of neurology, and 1 week each of the O's (oto, ophtho, ortho). Psychiatry and neurology are graded honors/high pass/pass/low pass/fail, while the O's are graded pass/fail. Thus, some consider this block to be relatively less stressful than the other rotations, but as in all rotations, it is often what you make of it. As a first block, it can be a smoother and gentler way to transition into clinical rotations and the workings of the hospital. As a later block, it can be a way to consolidate some of the information you have learned from your previous rotations.

### **Psychiatry**

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 diagnostic scheme (axis) of the DSM-IV (The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders). You will also be involved in the application of psycho-pharmacological 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. Ideally, students will learn to become more sensitive to the existence of psychiatric issues in all patients and to recognize the indications for psychiatric evaluation.

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. 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 presentation will vary by institution and service. You will also have the opportunity to participate in hospital consult services, where you will be able to see how somatic disease and psychiatric illness interface. Every student participates in outpatient experiences at the VA and/or the Resident Clinic at 3535 Market Street and spends a few evenings at the psychiatric emergency evaluation centers at HUP (PEEC) or Pennsy (CRC). You will also have some scheduled experiences with the CHOP psychiatry team (a consult-only team, with no inpatients of their own). You will be provided a schedule of your specific activities at the beginning of your rotation.

- **Schedule/Daily Responsibilities:** 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 in the afternoons on the inpatient wards, and you may participate in these also. There is generally no “call,” but you are expected to work 3-4 evening and/or weekend shifts in the psychiatric emergency centers at either HUP (PEEC) or Pennsy (CRC).

- **Grading/Exams:** Your grade in this course will be determined by:
  - subjective 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 2009, this cutoff was 84).

You may also be required to complete one or two topic presentations—in some past years, all students have been required to complete one presentation on psychiatric aspects of a chronic disease. See the “Sample Documents” packet for an example.

- **Clothing:** 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 patient.
- **Team:** This usually consists of an attending, resident and 2-3 students.
- **Books:** See book guide at the back for detailed recommendations.
- **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.

Some helpful hints for psych:

- This is the only rotation where you don’t shake your patient’s hand when you walk in the room.
- Stay safe. This means never putting the patient between you and the door, never doing anything you feel uncomfortable with, and adhering to any guidelines that your residents and attendings create.
- Keep tabs on your own emotions and reactions to the rotation. Seek help if you are having trouble dealing with your own mental health while on psych.

**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:**

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

## Neurology

The neurology block is a great opportunity to learn about the various major diseases involving the central and peripheral nervous system. On the first day of the rotation, you will meet as a group with the course director, Dr. Amy Pruitt and choose which type of clinical experience you would like to have. You may choose to do a rotation in pediatric neurology, inpatient neurology, or consult service. The sites also vary in terms of hours and expectations, so try to find out from your friends about the various sites.

Throughout the rotation, you will meet regularly for lectures that will cover a lot of the material you will need for the shelf. The course director will also provide you with a syllabus of materials. The inpatient experiences should be very similar to your core rotation in inpatient medicine 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. You may be asked to prepare a topic presentation to present to your team—see the "Sample Documents" packet for an example of a Neurology topic presentation.

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

### ***Neurologic Exam***

#### **Cranial Nerves:**

I: Olfactory: most do not try to test this; if you are really on top of your game, you may have a vial of something with an odor.

II: Optic: Can use the eye chart in Maxwell's; Remember to do visual fields

III/IV/VI: Extraocular movement; light reflexes

V: Trigeminal: You can do 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

**Books/supplies:** The neurology exam is a shelf exam; however, the course director is pretty lenient on shelf exam scores as she truly wants medical students to focus on inpatient responsibilities and real-life scenarios, rather than "teaching to the shelf." Nonetheless, you only have three weeks to study for the shelf and there is a large amount of information to be learned in neurology. Pay attention to the "yellow pages" distributed early in the course and know these cold for the exam. See the book guide at the back for detailed book information. Neurologists carry a black bag because they need a lot of toys for their neuro exam. As a student, you can stuff your white coat with a light pen, toothpicks or wooden cotton swabs, reflex hammer (or use the end of your stethoscope), tuning forks (if you really have it together), and an ophthalmoscope (if you have one or have friends from whom you can borrow one—definitely not necessary though).

### **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. They have recently been cracking down on attendance, so try to assess what is expected of you in the beginning of the week.

### **Orthopedics**

This week-long course begins with an introduction from the course director. The daily schedule usually consists of clinic or OR in the morning with didactics in the afternoon. Throughout the week, you will have an opportunity to rotate through the ORs and clinics at all the Penn hospitals (HUP, CHOP, VA, Presby). You will be given a set of questions and answers covering basic orthopedic topics and the exam questions at the end of the week will be drawn directly from these questions. The course is graded honors/pass/fail with an optional honors assignment. All students must also complete one patient write-up.

### **Surgery/ Emergency Medicine/Anesthesiology**

The combination of these three disciplines into a single clinical block allows for an integrated curriculum to best present clinical issues commonly encountered among practitioners in all three fields. Lectures and case- and problem-based learning sessions will address interdisciplinary topics including shock, fluids and electrolytes, hemodynamics, coagulation, peri-operative management, and trauma/critical care. Additionally, rotation-specific curricula will address topics more relevant to each discipline to compliment your clinical experience.

### **Surgery**

#### **Disclaimer:**

A testament to Penn's commitment to providing the best medical education experience, the Surgery Clerkship is continually improving. As a result, we urge you to check with the Course Director, Dr. Rachel Kelz, for any updates as recent changes to this clerkship may have been made after the printing of this booklet.

**Overview:**

The “Surgery block” is an 8-week period broken into 4 weeks of general surgery and 4 weeks of surgical subspecialties (cardiac, thoracic, bariatric, vascular, plastics, urology, etc.). As a 200 student you will complete one 4-week block of general surgery (graded Honors, High Pass, Pass, Low Pass, Fail) and two 2-week blocks of surgical subspecialty (graded Pass/Fail). This schedule affords most students both a broad surgical experience and a detailed view of the life of a surgeon.

Please refer to the following website for up-to-date information about schedules, grading, and course logistics: <http://www.uphs.upenn.edu/surgery/dse/medicalstudents/StudentsHome.html>

**The Team:**

- *200 Medical Students:* There are one to two medical students per team. If you are on a team with more than one student, there is certainly enough work to go around.
- *Sub-I:* This is a 3<sup>rd</sup> or 4<sup>th</sup> year medical student doing an advanced elective in surgery. S/he is expected to do/know more than you do, 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 general surgery/urology/neurosurgery/orthopedics/plastic surgery/ENT resident who is responsible for the patients on the service when everybody else is operating. 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, and it can help everyone get home earlier. 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/she rounds in the morning with the team and again in the evening when the day’s cases are finished. He/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 is typically not a chief resident on these services, and in those cases, the fellow is responsible for the service. He/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/fellow at the beginning of the rotation and sort out how best you can be of help to the team. In general, however, you will have the following responsibilities:

#### Pre-Rounds:

*Because most services have now switched to the night float system (an intern takes overnight call for a month and pre-rounds on the service's patients in the morning), the need for pre-rounding is mostly obsolete. Also, given the new medical student work hour restriction (see "Schedule" section below), chances are you will not be performing any of these duties.*

*However, if you are on a service that does NOT have a night float system in place, please read on. If you are unsure of whether or not your service has a night float, simply ask your chief the day before starting your rotation.*

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. Some chiefs/fellows would like you to wake up the patient to talk/examine them; others will just want you to collect the patients' data. Again, it is wise to find out what the information they would like you to gather. 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 vital signs 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. Remember, surgeons appreciate students who want to assume responsibility. Try to keep presentations short and to the point 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 2.3 and put out 2.0 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, and he/she usually does so 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, surgeons want quick and concise. Ask your intern to see his/her notes early on in the rotation for examples of daily 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 on these.

#### A word about the “Scut Bucket”:

The “scut bucket” is a pail full of supplies that some teams use when 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 and carrying the bucket on rounds. 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

A lot of being a great surgery 200 student is trying to facilitate efficiency. 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. Even better, if you change a patient’s dressing EVERY MORNING, when the team is in the room before the patient whose dressing is changed, sneak ahead and take the dressing down before the team enters the patient’s room. Thinking ahead DOES NOT GO UNNOTICED on surgical services!!

#### **Operating Room etiquette (*You will learn how to scrub during orientation, so rest easy!*):**

- Observe positioning and prepping the patient, draping, dressings and takedown, post-op note writing.
- Help your resident with the above.
- The nurses can make or break your time in the OR. Whenever you walk into an OR, introduce yourself to the circulator (the OR nurse that deals with issues during a case) and to 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.



- It's ok to peek over someone's shoulders, as it is sometimes very difficult to see what is going on.
- Try to learn when to stand back and get out of the way.
- DO NOT ask for instruments, except for scissors when someone ties a knot (it is often the medical student's job to cut sutures after a knot is tied).
- DO NOT take instruments off of the scrub nurse's table.
- If you contaminate yourself just step back from the table. It's ok, everybody has done it more than once.
- 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 try to pay attention... surprisingly, you can learn quite a bit of functional anatomy in the OR.
- Avoid asking questions you should know the answers to, such as "what is the blood supply of the spleen??"
- 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:**

Beginning this year, 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 service to service and from hospital to hospital (and the med student schedules have changed in the past year or two as part of a general re-working of the Surgery clerkship). Dr. Kelz 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 in the orientation packet you will receive on your first day of the Surgery Clerkship.

In general, and as of this printing, 200 medical students on the Surgery Clerkship are expected to work 12-hour days, from **6am – 6pm**. The attendings, residents and interns are aware of this recent change, however, they will usually not be watching the clock. If your team typically rounds at 6am but has to round at 5:45am one day to make it to a morning conference, use your judgment about when you should show up.

Rounds typically last from 6am-7:00am, depending. Most surgical teams end up in the cafeteria and have breakfast together before heading to the OR for the remainder of the day. 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 attending clinic. 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 in 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 to learn from—they.

Fridays: As with most of your clerkships, your Fridays will be reserved for didactics and PBLs (Problem-Based Learning) sessions. Please refer to the Surgery Clerkship website for more information. Most teams do not expect you to round on Fridays before didactics. Just check in with your resident on Thursday to remind them.

**What to Wear:**

On operative days, you can wear scrubs, but you should still look washed and awake. Make sure to wear clogs or comfortable shoes. On clinic days, women should wear pants/skirt, closed toe shoes, and a shirt/sweater. Men should wear a shirt and tie. 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.

**What to Put in Your White Coat:**

- Stethoscope
- Penlight/Reflex Hammer
- Epocrates/ Pharmacopaeia
- 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
- Trauma shears (or disposable scissors)
- 4X4's, Tape
- Alcohol swabs
- Granola/Cliff/Power bars – 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:**

See book guide at the back for detailed book information.

**Additional Requirements:**

- Each week, students will have PBL sessions led by general surgery residents. In these session, you will typically go over problem sets and may have to do a presentation at the conclusion of the rotation. This year, there will be an additional PBL session on surgical quality. Additionally, each student will need to follow a patient for the duration of the clerkship in accordance with the National Surgical Quality Improvement Program.
- You will also need to turn in 6 write ups during the course of the block. Four of the six 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.

### **Grading:**

The rotation is graded honors/high pass/pass/low 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 PBL grade. A minimum of 78 on the shelf is needed to qualify for honors. You may not know much, but if you are always eager to scrub on cases, regardless of how late they go, you will be revered by your team. On the other hand, surgeons are extremely busy and are sometimes difficult to track down to complete your evaluations. Thus, both your shelf grade and your evaluations are crucial in this rotation. 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.

### **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 him/her more time to study for the surgery shelf. And there's good reason – the surgery shelf examination is challenging and requires preparation. 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 management of patients with surgical issues rather than surgical techniques. 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 some enthusiasm even for the little jobs that you do (like getting numbers for pre-rounding).
- Be punctual. This is VERY important.
- At the end of each day, or before they let you go, ask your senior if there is anything you can help with. Even if you know that there's nothing to do, you should always ask.
- Find out what cases are scheduled for the next day and what anatomy you should read up on. 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.
- Know about the patients and the procedure being done. Residents like when you're interested in what's going on.
- Be safe. Protect yourself. Go slowly so that you do not stick yourself with a needle. If you do, go to Occupational health (daytime) or the ER (after hours). Your residents may tell you “I always get stuck, and I never do anything about it” - that's THEIR choice, and it shouldn't be yours.
- If you're not having a good time, or you're having a horrible time, or you're just a little stressed: Talk about it to your friends, family, etc. Letting off a little steam and laughing at yourself always works.

- **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 that only lasts 8 weeks, so try to enjoy it!

#### **What not to do:**

- Show up your fellow students (e.g., jumping in with the answer to a question that was directed to a fellow student)
- Show up your residents (e.g. jumping in with information on rounds that the chief resident/fellow did not present to the attending)
- Pimp the residents/fellows
- Seem bored, artificially interested, fake or insincere
- Always be the last to arrive and the first to leave
- Ask questions at inappropriate times (i.e. patient bleeding out)
- Interfere with the efficiency of the service. Again, surgical services are usually very large. The chief resident is a PGY7 and has been at this for a while, so chances are he/she knows what he/she is doing. You, however, will not. It's ok, it takes a while.

#### **First day/week suggestions:**

- Ask your intern/junior/whoever is around 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 practice 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/fellow, but he/she will likely refer you to the intern.
- Find out how to get the weeks' OR schedule so you can read up on the cases.
- 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.

#### **In the middle of the second week:**

- Tell your senior that you'd really like some feedback, constructive criticism, etc. If they feel 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 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 their guidance, you will do great!!**

## **Emergency Medicine**

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, you will look quite smart if you can whip out some terms like "R wave progression," "bifascicular block" and the like. Also remember that more important than the EKG in front of you is the old EKG and any changes. Look at the T-waves for subtle 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. Reading up on differentials for 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 will be extremely high yield. 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 (i.e., fainting due to hypovolemia or due to an arrhythmia) to show your superiors you're thinking.

Your presentations to the attendings and the residents are probably where you will be graded the most. Presentations should incorporate relevant past medical history and be focused on the presenting complaint. Different people want to hear different presentations, either short and to the point or complete H&P's—when in doubt, go for completeness. 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 triage – 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 an MI, Thoracic Aneurysm or even a Pulmonary Embolus, but given her symptoms this is most likely a GERD exacerbation."

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.

### **Schedule:**

Students can go to HUP, Pennsy, Presby, CHOP, and Reading. Depending on your site, your shifts will vary but students generally work approximately 110 hours over the course of the rotation in addition to didactics. Plan to work some nights and weekend shifts as well.

**Test:**

Save a day before the Surgery shelf to make sure you study for the ED exam, since it is a separate, multiple-choice departmental exam. If you study the class notes and review the lectures in detail, you will be just fine.

**Grading:**

The course is graded honors/high pass,/pass/lowpass/fail. The final grade is based on the test and clinical evaluations. To qualify for honors students need to receive at least an 85% on the test and have an average of at least 6/7 on their evaluations.

### **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, and palliative 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 local anesthetics, anesthesia risks, pain management and conscious sedation. Relevant readings will be provided—no textbook is necessary.

## AOA Guide to Review and Text Books for the Clinics

There are lots and lots of books available for each clerkship. They come in all formats, and they will all try to convince you that they will give you the best preparation for the shelf exam. This is our list of what worked best for us. All of us learn differently from each other and from you, so you will see quite a bit of variation among recommendations. Hopefully, though, this will at least help you make sense of all the options. In general, you will want to spend a good deal of time reading and reviewing, and will also want to do at least one book of practice questions.

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

- **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, but they can be a great way to guide your studying.
- **Blueprints**
  - This series is very readable. 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.
  - The practice tests are generally useful.
  - 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 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.

- 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 do the relevant questions for each rotation.
- 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 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.

- The following textbooks can be good references in conjunction with Up-to-Date, particularly for patient presentations, but they are too long 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. Most students (many of whom are successful in the clerkship) do not use the textbooks at all. Harrison's Internal Medicine is available online through the Biomedical Library website at no cost, and is a fantastic reference when you need more information than you find in your review books.
  - **Cecil's Textbook of General Medicine**
  - **Kochar's Concise Textbook of Medicine**
  - **Fishman's Medicine**
- In addition, a review book is very helpful for shelf exam review and almost everyone reads one of the ones listed below.
  - **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 book 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, but you should probably supplement it with a question book.
- You will also want at least one question book:
  - **MKSAP** for Students: There are several additions 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 difficult than shelf questions and focus on complex patient management rather than initial diagnosis and management. Doing at least one entire book and reading explanations thoroughly will take a good amount of time but is crucial for the medicine shelf.
  - **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:
  - 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.
  - 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**.
  - Reading **UpToDate** articles related to your patients during downtime in the hospital is very useful.
  - *Pocket Medicine* is a great book to have in your 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/ complications in your reading. Worry less about surgical techniques.

- There are two textbooks of general surgery that 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**
- **Surgical Recall** is the one book recommended by nearly everyone and called "essential" by many. It will fit in your pocket, and it is a good read outside the OR to prepare you for pimping.
- A review book may also be useful:

- **NMS:** As usual, dense and detailed. Questions were noted to be useful.
- **Blueprints:** Not enough detail. Questions may be useful as they are similar in length to the questions on the shelf (i.e. LONG).
- **First Aid for the Surgery Clerkship:** Very helpful and manageable for mid-week reading.
- Question books:
  - **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%).
  - **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.
  - **Surgery Case Files:** Cases with questions and detailed answers Recommended.
  - **A&L:** Questions are very difficult but useful, particularly for subspecialties.
- Other resources:
  - **NMS Case Book:** A great review of the whole body. Easy to get through and a great supplement to a review book.
  - **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.
  - Don't buy a surgical atlas.
- Subspecialty Specific:
  - Trauma: A&L for questions (there is a lot of Trauma on the shelf).
  - Hand Plastics: "The Hand"- a book that Dr. Chang will give you.
  - Transplant: Review immunology and immunosuppressing drugs in NMS before starting (graft v host, immunosuppression).

### Pediatrics

This shelf exam is sometimes underestimated and is actually 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 recommended by the course director. It is a very complete review book. BRS questions are excellent preparation for the shelf. **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) 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 question books and/or Case Files.
- Other Review Books:
  - **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.
  - **NMS:** This one is not as dense as many in the series. A combination of Blueprints and NMS was recommended by some people.

- **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 Books:
  - **PreTest:** Highly recommended (most people use).
  - **Kaplan QBook:** Highly recommended (many people use).
  - **Case Files:** Highly recommended (most people use).
  - **A&L:** Not used by most people.

### Ob-Gyn

- Most of us recommended using one book for an overview in this course:
  - **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 Case Files and a question book.
  - **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 books:
  - **Case Files:** This is essential for doing well on this shelf, as most of the cases are identical to those you will see on the shelf.
  - **Kaplan QBook:** Highly recommended.
  - **A&L:** Most people recommend using this book for practice questions, especially the full practice tests.
  - **PreTest:** A good number of the questions in this book are not pertinent or are incorrect, but many people use this book.
  - **Blueprints Q&A/ Blueprints Cases:** Both of these give more practice with solving clinical cases as you have to do on the shelf.
  - In the past, the OB/GYN department has subscribed to a question set that they have sent out to students. These questions are reportedly written by the same people who write the shelf. Their relevance varies from test to test, but they are generally reflective of the exam and often extremely helpful.
- **Ob/Gyn Secrets:** Written by HUP docs so particularly useful if rotating at HUP. Also, noted to be very useful for review.

### 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.
- Question books:
  - **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.
- Other resources:
  - Some kind of pocket book is was recommended by some:
    - **Moore's Little Black Book of Psychiatry**
    - *Green Pocket Medicine* book on Psychiatry is very comprehensive and useful.
  - 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.

### Neurology

- **Blueprints:** this book is very readable. It is especially helpful for the shelf exam, since you only have three weeks to study, and it covers many of the basic topics that will be on the exam.
- 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)
- Definitely 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.

### Emergency Medicine

- Again, this is not a shelf exam. For the most part, knowing the class notes well is sufficient, but the exam does test the notes in detail. Make sure you save some time to study for this, and you'll do well.
- **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.

## **Exposure to Blood and Body Fluids**

You have already performed physical exams on patients in the hospital and 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.

### **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**

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- 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 (Wood Clinic) or to the Emergency Room if they are closed.

**York Hospital** - Report to the Employee Health Service or call the Safety Hotline at extension 4444.

**Chestnut Hill Hospital** – Report to the Emergency Department.

**Englewood Hospital** – Report to the Employee Health service between the hours of 8:00 am – 4:00 pm or to Emergency Room after those hours.

**Chester County Hospital** – Report to the Emergency Department.

**St. Luke's Hospital** – Check with your attending physician as the protocol varies according to the service.

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

### **Billing Procedures**

All expenses that a student incurs, associated with needlesticks, will be paid for by the School of Medicine. At HUP or Presbyterian, these charges should automatically be billed to the School. However, if you do receive a bill for any of these services, please bring it to Nancy Murphy in the Office of Student Affairs immediately, so that the charges can be transferred to the school account. At affiliated hospitals, typically the bill will be sent to your home address. Please bring it to Nancy Murphy immediately so that the School of Medicine can pay the bill.

### **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.

## **Transportation**

As you enter the clinics the hours you will be keeping will change (e.g. earlier and later), and many of you will have to find a new way to get to and from school. Keep in mind that public transportation runs less frequently and walking/biking may be unsafe early in the morning and late at night.

### **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 Erin Engelstad 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 and are paid for by personal check. Cash and credit cards are not accepted.

### **Boundaries**

The shuttle service will operate 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	8 <sup>th</sup> Street
West	50 <sup>th</sup> 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 may be booked one calendar week in advance, 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 [3] 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. a) Pre-scheduled Cancellation between 7:00 am and 12:00 am, Monday through Sunday
  1. Call 898-RIDE
  2. Press #4 after introductory message to reach the reservation line.
  3. Leave your message with name, address, date and time of pick-up.
  4. Your pick-up will be automatically canceled.
- b) Emergency Cancellation between 12:00 am - 7:00 am, Monday through Sunday call 898-RIDE.
2. You must call to cancel a scheduled pickup or it will be considered a "no show". Two (2) "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. PTS will not operate services on the following holidays: Thanksgiving Day, Christmas Day, New Year's Day and July 4th.

#### **PARKING**

**HUP/CHOP:** In Lot 44, a covered garage on Curie Boulevard next to BRB II/III, there are a limited number of spaces open to all students which can be rented on a monthly basis. The current rate for parking in this lot is \$148.00 payable in cash or check (made payable to the Trustees of the University of Pennsylvania). If you are interested in getting a spot for a given rotation, please see Nancy Murphy, in the Office of Student Affairs approximately 10 days before the rotation begins. She will provide you with additional information regarding parking cards for this lot.

If you need parking for the evenings and weekends for Lot 44 while you are on an ambulatory rotation, there are a limited number of parking cards available on a first come, first serve basis. The card enables you to park Monday-Friday from 6 p.m.-7 a.m., as well as all day Saturday and Sunday. If you are interested, please see Erin Engelstad in the Office of Student Affairs.

**PENNSYLVANIA:** There is no parking available for students. Please plan to use public transportation during your rotations here.

**PRESBYTERIAN:** To arrange for parking, you must get a Presbyterian Hospital ID card for a refundable \$10 deposit. After you get your ID you must contact John in the parking office at (215) 662-9367, and he will activate your card for the time period that you are there. You must return your ID card to have your \$10 refunded. Free parking is available north and west of the hospital, e.g. there are spots on 38<sup>th</sup> Street but you usually have to arrive by 6:45 am in order to get a spot.

**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.

### **Quick Phone Reference**

Office of Vice Dean for Education	898-8034
Office of Student Affairs	898-7190
Office of Minority Affairs	898-4409
Registrar	898-4676
Office of Admissions & Financial Aid	898-8001
Curriculum Office	898-8091
Office of Combined Degree Programs	898-8025
Biomedical Library	898-5815
Escort	898-RIDE
Student Health	662-2850
University Information	898-7111
Hospital of the University of Pennsylvania	662-4000
Children's Hospital of Philadelphia	590-1000
Pennsylvania Hospital (8 & Spruce)	829-3000
Presbyterian Medical Center (39 & Market)	662-8000
Veterans Administration Hospital	823-5800

### **Rotation Directors and Coordinators:**

<b>Course</b>	<b>Director</b>	<b>Phone</b>	<b>Coordinator</b>	<b>Phone</b>
AE200	Jeremy Kukafka, MD	662-3773	Linda Cardamone	662-3773
EM200	Roger Band, MD	662-8506		
FM200	Katie Margo, MD	614-0848	Diana Brown	615-4176
ME200	Jen Kogan, MD	662-2250	Ann Marie Hunt	662-2528
	Colleen Crumlish, MD			
NE200	Amy Pruitt, MD	349-2796		
OG200	Anne Honebrink, MD	829-7201	Rozlyn Levit	662-2459
OP200	Prithvi Sankar, M.D.	662-8037	John Dempsey	662-8069
OR200	Joseph Bernstein, MD		Barbara Weinraub	349-8731
OT200	Douglas Bigelow, MD	662-6970	Sandy Corkery	662-6970
PE200	Jeanine Ronan, MD	590-1214	Dawn Young	590-1214
	Rebecca Tenney- Soeiro, MD			
PS200	Benoit Dube, MD	746-7254	Kait Yulman	746-7212
SU200	Rachel Kelz, MD	662-2030	Evelyn Diaz	662-2016

## 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	
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
Rhoads 3	3805
Rhoads 4	3856

### *Laboratories*

Blood Bank	3448	Rhoads 5	3830
Chemistry	6830	Rhoads 6	3860
Coags	3454	Rhoads 7	3800
Cytology	3216/3209	MICU	3880
Endocrine	4021/3420	IMCU	7195
General	6830	CCU	3890
Heme	6196/6990	CICU	3836
ABG	3724		
Microbiology	3415		

### *Others*

Dialysis	2646
EEG	2661
Nutrition	2069
OT	3270
PFTs	6420

### *Radiology*

Angio	4034/3080	PT	7773
Chest	3061/3005	Resp	2555
		Therapy	
CT Body	3142	Social	2375
		Work	
CT Head	3480	Speech	2784
ER Rdng. Rm	3054	Vascular	2084
File Rm	3058	XRT	2428
GI Fluoro	3518	Rehab	3464
GU	3053/3015		
MRI	6570		
Nuc Med	3076		

Scheduling	3005
US	3123

## **HUP Acceptable Abbreviations**

### **A**

AAA	abdominal aortic aneurysm
A2	aortic second sound
ab	aborted
AB	abduction
abd	abdomen
ABG	arterial blood gases
ABG	aortic bypass graft
ac	before meals
ACTH	adrenocorticotrophic hormone
AD	adduction
ADH	antidiuretic hormone
ADL	activities of daily living
ad. lib.	as desired
ADM	admission
AFB	acid-fast bacilli
afeb	afebrile
A/G	albumin globulin ratio
A&I	allergy and immunology
AK	above the knee
ALS	amyotrophic lateral sclerosis
AMA	against medical advice
AML	acute myelogenous leukemia
ANA	antinuclear antibody
AODM	adult onset diabetes mellitus
A&P	assessment and plan
A&P	auscultation and percussion
A-P	anterior posterior
AROM	artificial rupture of membranes
ASA	aspirin
ARF	acute renal failure
ASCVD	arteriosclerotic cardiovascular disease
ASD	atrial septal defect
ASHD	arteriosclerotic heart disease
A&W	alive and well
A	assessment
AWOL	absent without leave
AVR	aortic valve replacement
AV	arteriovenous
AVD	aortic valvular disease

### **B**

B	black
BC	blood cultures

BDI	Beck depression inventory
BCP	birth control pills
BD	birth date
BE	barium enema
bid	twice a day
bili	bilirubin
bld	blood
BLE	bilateral lower extremity
BK	below knee
bm	bowel movement
BMR	basal metabolic rate
BP	blood pressure
BPH	benign prostatic hypertrophy
BR	bathroom
BRP	bathroom privileges
BS	bowel sounds
bs	breath sounds
BTL	bilateral tubal ligation
BUE	bilateral upper extremity
BUN	blood urea nitrogen
Bx	biopsy

## C

c	with
c1	compliment
CA	carcinoma
CAD	coronary artery disease
CABG	coronary artery bypass graft
CBC	complete blood count
CAPD	Chronic Ambulatory Peritoneal Dialysis
CAT	computerized axial tomography
CC	chief complaint
cc	cubic centimeter
CHF	Congestive Heart Failure
CHOP	Children's Hospital of Philadelphia
cm	cubic centimeter
CN	cranial nerves
CNS	central nervous system
COPD	chronic obstructive pulmonary disease
CPK	creatine phosphokinase
CPR	cardiopulmonary resuscitation
CR	creatinine
CREAT	creatinine
CRF	chronic renal failure
C&S	culture and sensitivity
CSF	cerebral spinal fluid

CST	contraction stress test
C/S	cesarean (C-) section
CT	cardio-thoracic
C-V	cardio-vascular
CVA	cerebrovascular accident
CVA	costovertebral angle
CVAT	costovertebral angle tenderness
CVP	central venous pressure
CPD	cephalopelvic disproportion
CW	crutch walking
Cx	cervix
CxMg	circumflex marginal
CXR	chest x-ray

## D

D/C	discontinue
D/C	discharge
D&C	dilation and curettage
D&E	dilation and evacuation
dig	digoxin
diff	differential
dist	distal
D J D	degenerative joint disease
DM	diabetes mellitus
DNA	deoxyribonucleic acid
dp	dorsalis pedis
DOA	dead on arrival
DOC	disease of childhood
DOE	dyspnea on exertion
drsg	dressing
DSM	diagnostic and statistic manual
DTP	diphtheria, tetanus toxoid, pertussis
DT	delerium tremens
DTR	deep tendon reflexes
DUB	dysfunctional uterine bleeding
Dx	diagnosis
D <sub>co</sub>	diffusing capacity
D5W	Dextrose 5% in water
D5 ½NS	Dextrose 5% in half normal saline

## E

EBL	estimated blood loss
ECG/EKG	electrocardiogram
ECHO	echocardiogram
E. coli	escherichia coli
ECT	electroconvulsive therapy



EDC	estimated date of confinement
EENT	eyes, ears, nose, throat
EMG	electromyogram
ESRD	end stage renal disease
ESR	erythrocyte sedimentation rate
ETT	endotracheal tube
ETOH	ethanol
EUA	examination under anesthesia
Ext	extremities
EGA	estimated gestational age

## **F**

FA	fetal activity
FBS	fasting blood sugar
FEV	forced expiratory volume
FEV <sub>1</sub>	forced expiratory volume in one second
Fe	iron
FH	family history
FH	fundal height
FHT	fetal heart tones
FIO <sub>2</sub>	inspired oxygen concentration
fib	fibrillation
flex	flexors
FRC	functional residual capacity
FSH	follicle stimulating hormone
F-sd	foley to straight drainage
FT	full term
F/U	follow-up
FUO	fever of unknown origin
fx	fracture
FTA-ABS	fluorescent antibody test for syphilis
5-FU	5-fluorouracil

## **G**

g	gallop
GA	general anesthesia
G6PD	glucose 6-phosphate dehydrogenase
GH	growth hormone
GI	gastro-intestinal
glu	glucose
Gm	gram
G_P_	gravida, para
GTT	glucose tolerance test
GU	genitourinary
GYN	gynecology

## H

H	hour
HA	headache
HAA	hepatitis associated antigen
HAS	hepatitis (b) associated
HBAg	hepatitis B antigen
HC	head circumference
HCT	hematocrit
HD	heart disease
Hgb	hemoglobin
H&H	hemoglobin, hematocrit
HCVD	hypertensive cardiovascular disease
HNP	herniated nucleus pulposus
H/O	history of
H&P	history and physical
HPF	high powered field
HPI	history of present illness
hr	hour
h.s.	bedtime
HTN	hypertension
ht	height
HUP	Hospital of the Univ. of Pennsylvania
Hx	history

## I

ICP	intracranial pressure
ICPB	intracranial pressure bolt
ICS	intercostal space
ICU	intensive care unit
I&D	incision and drainage
ID	identification
ID	infectious disease
Ig	immunoglobulin
IHSS	idiopathic hypertrophic subaortic stenosis
IM	intramuscular
IMA	internal mammary artery
imp	impression
INH	isoniazid
I/O	intake and output
IPPB	intermittent positive pressure breathing
ITP	idiopathic thrombocytopenic purpura
IV	intravenous
IVP	intravenous pyelogram
IUGR	intrauterine growth retardation
IUP	intrauterine pregnancy
IVH	intravenous hyperalimentation

<b>J</b>	
JAR	junior admitting resident
JVD	jugular venous distension
<b>K</b>	
KUB	kidney, ureter, bladder
KVO	keep vein open
<b>L</b>	
L	left
LAD	left anterior descending
lat	lateral
LBBB	left bundle branch block
LDH	lactase dehydrogenase
LE	lower extremity
LF	labor floor
LFT	liver function test
lg	large
LH	leutenizing hormone
LL	lower leg
LLL	left lower leg
LMCA	left main coronary artery
LSB	left sternal border
LLQ	left lower quadrant
LMD	local medical doctor
LMP	last menstrual period
LP	lumbar puncture
LOC	loss of consciousness
LUL	left upper lobe
LUQ	left upper quadrant
LV	left ventricle
LVEDP	left ventricular end diastolic pressure
lytes	electrolytes
<b>M</b>	
m	murmur
M-A tube	Miller-Abbott tube
MCH	mean corpuscular hemoglobin
MCV	mean cell volume
MCL	mid-clavicular line
mEq	milliequivalents
MI	myocardial infarction
MICU	medical intensive care unit
MG	myasthenia gravis
M-K	Munro-Kerr (c-section)

MOM	milk of magnesia
MMEFR	maximum mid expiratory rate
MMIF	maximum mid inspiratory flow
MMPI	Minnesota multiphasic personality inventory
MR	mental retardation
ms	mental status
MVA	motor vehicle accident
MVP	mitral valve prolapse
MS	mitral stenosis
MVR	mitral valve replacement

## N

NAD	no acute distress
N/C	normocephalic
Neuro	neurologic, neurology
NG	nasogastric
ng	negative
NKDA	no known drug allergy
nl	normal
NPO	nothing by mouth
NSR	normal sinus rhythm
NST	non-stress test
NTT	nasotracheal tube
N/V	nausea, vomiting

## O

O	objective
OB	obstetrics
occ	occasional
OC	oral contraceptive
OBS	organic brain syndrome
OD	right eye
OMFS	Oral & Maxillofacial Surgery
OPD	outpatient department
OOB	out of bed
OR	operating room
ORL	otorhinolaryngology
OS	left eye
ORIF	open reduction internal fixation
OT	occupational therapy
OU	both eyes

## P

p	post
p	pulse
P	plan

P&A	percussion and auscultation
P/A	posterior, anterior
PAH	Pennsylvania Hospital
PAP	papanicolaou
PAT	paroxysmal atrial tachycardia
pc	after meals
PCN	penicillin
PEEP	positive end expiratory airway pressure
PE	physical exam
PERRLA	pupils equally responsive and reactive to light, accommodation
PGH	Philadelphia General Hospital
PFT	pulmonary function test
PI	present illness
PID	pelvic inflammatory disease
plat	platelets
PMC	Presbyterian Medical Center
PMI	point of maximal impulse
PM&R	physical medicine and rehabilitation
PKU	phenylketonuria
pm	afternoon
PMH	past medical history
p.o.	by mouth (per os)
POD	post operative day
poly	polymorphonuclear leukocytes
PPD	purified protein derivative
ppd	pack per day
PND	paroxysmal nocturnal dyspnea
prn	whenever necessary
PROM	premature rupture of membranes
procto	proctoscopy
PS I, II	Physical Status one, two, etc.
pt	patient
PT	physical therapy
PTA	prior to admission
PVD	peripheral vascular disease
PVC	premature ventricular contraction
PTT	partial prothrombin time
PUD	peptic ulcer disease
preg	pregnancy

## Q

q	every
qd	every day (no longer an accepted abbreviation)
qh	every hour
qhs	every bedtime
q2h	every two hours

q3h	every three hours
qid	four times a day
qod	every other day

## R

R	right
r	rate
RAG	room air gas
RBBB	right bundle branch block
rbc	red blood cell
RBC	red blood count
RCA	right coronary artery
RF	rheumatoid factor
RDS	respiratory distress syndrome
reg	regular
Rh	rhesus blood factor
RHD	rheumatic heart disease
RLE	right lower extremity
RLL	right lower lobe
RLQ	right lower quadrant
RML	right middle lobe
RN	registered nurse
RNA	ribonucleic acid
R/O	rule out
ROM	range of motion
ROS	review of systems
RPR	Reiter protein reaction
RPRC	rapid plasma reagin card test
RT	radiation therapy
RTC	return to clinic
RUL	right upper lobe
RUQ	right upper quadrant
Rx	treatment, therapy
RV	right ventricle

## S

S	subjective
s	without
SAB	spontaneous abortion
SAR	senior admitting resident
SBO	small bowel obstruction
s.c.	subcutaneous
SDH	subdural hematoma
SEMI	subendocardial myocardial infarction
SBE	subacute bacterial endocarditis
SEM	systolic ejection murmur

SGOT	serum glutamic oxalylacetic transaminase
SGPT	serum glutamic pyruvic transaminase
SH	social history
SICU	surgical intensive care unit
SLE	systemic lupus erythematosus
sl	slight
SOB	shortness of breath
S/P	status post
SPU	short procedure unit
STAT	immediately
STS	serologic test for syphilis
Staph	staphylococcus
SROM	spontaneous rupture of membranes
STD	sexually transmitted disease
Strep	streptococcus
subj	subjective
sub Q	subcutaneous
SVD	spontaneous vaginal delivery
Sx	symptoms

## T

T	temperature
T <sub>3</sub>	triiodothyronine
T <sub>4</sub>	tetraiodothyronine
tab	tablet
T&A	tonsillectomy and adenoidectomy
TAB	therapeutic abortion
TAH	total abdominal hysterectomy
Tb, Tbc	tuberculosis
tblsp	tablespoon
T/C	to consider
T&C	type and cross
T&S	type and screen
TCN	tetracycline
TFT	thyroid function tests
TEN	toxic epidermal necrolysis
THA	total hip arthroplasty
t.i.d.	three times a day
TIA	transient ischemic attack
TM	tympanic membrane
TSH	thyroid stimulating hormone
TURP	transurethral resection of prostate
TV	tidal volume
TVO	transient visual obstruction

## U

U/A	urinalysis
UE	upper extremity
UGI	upper gastrointestinal
U-P	uretero-pelvic
UPJ	uretero-pelvic junction
UVJ	uretero-vesicle junction
URI	upper respiratory infection
UTI	urinary tract infection

## V

VA or VAMC	Veterans Administration Hospital
VD	venereal disease
VDRL	venereal disease, research lab test
VS	vital signs
VSS	vital signs stable
vtx	vertex

## W

W	white
w	with
WBC	white blood count
W/C	wheel chair
WDWN	well developed, well nourished
wks	weeks
w/o	without
wnl	within normal limits
wt	weight
w/u	work up

## X

x	except
XRT	x-ray therapy, radiation therapy
x3,x4	times three, times four

## Y

yr	year
yo	year-old



### **Sample Patient Write-ups**

\*Disclaimer: These write-ups are VERY detailed! You will write more detailed write-ups on Medicine and Peds, far less involved on Surgery. Your H&Ps at the beginning of your rotation will probably not look like this, but if they do by the end, you are in great shape!

## PEDIATRICS

**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 101-102°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, earache, 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 persistently 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. McNett 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, SpO<sub>2</sub> 100%, RA

Growth parameters: Weight 16.3 kg (50<sup>th</sup> percentile), Height 75<sup>th</sup> percentile (Did not record actual value in centimeters.)

General: Well-appearing, no acute distress. Sleeping quietly for first half of exam. Awake, alert, friendly, and cooperative for second half of exam.

Skin: Scattered hyperpigmented areas. A few scattered small petechiae on anterior neck and upper chest.

HEENT: Atraumatic, normocephalic. Normal alignment and position of brows, lashes, lids. Pink conjunctivae, with no conjunctival injection. Sclerae anicteric. Lacrimal apparatus not palpated. Pupils equal, round, and reactive to light. Visual fields and visual acuity not tested. Ophthalmoscopy not completed. Pinna normal to inspection and palpation. Auditory acuity not tested. Right and left tympanic membranes dull and bulging. No nasal congestion or rhinorrhea. Dried blood on lower lip. Oral mucosa pale with no obvious ulcers but a few palatal petechiae. No pharyngeal erythema or edema and normal tonsils. Did not examine dentition.

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.

Neurologic: Cranial nerves II, IX, X, and XII intact. Cranial nerves III, IV, V, VI, VII, VIII, and XI not specifically tested, but grossly intact. Strength, reflexes, and coordination not tested.

### **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, T<sub>max</sub>=105.8°C), 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 café-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 ceftazidime (50 mcg/kg, every 8 hours, IV)
- 3) Influenza A: - Seems to be resolved or resolving—monitor for fevers and bacterial superinfections
- 4) Melena: - Heme test 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

## MEDICINE

Source of History: Patient, Reliable Historian

Chief Complaint: "pains in my stomach"

**HPI:** Mr. R is a 25 year old man with PMH significant for 3 year history of extensive GI work-up with 4 hospital admissions to an OSH for waxing and waning abdominal pain associated with nausea, vomiting, diarrhea, "dark urine", and a non-blanching petechial rash without definitive diagnosis, who presents now with 6 days of similar symptoms that acutely worsened 48 hours ago. He was in his USOH until 6 days ago, when he noted the sudden onset of lower abdominal pain (RLQ>LLQ) associated with nausea, nonbloody vomiting to all oral intake, a diffuse, petechial rash on his arms, legs and trunk, and "dark urine" that has been characteristic of his 4 prior flares. 4 days PTA, the patient presented to his PCP; a definitive diagnosis was not suggested but a prednisone taper was initiated, which the patient states significantly improved both his abdominal pain and rash until the day of admission.

On the morning of admission, the patient awoke with 10/10, subumbilical abdominal pain greatest in the RLQ, which he describes as sharp, stabbing, and nonradiating, along with severe nausea, nonbloody vomiting, a worsening of his erythematous rash (nonpruritic, nonpainful), and "dark urine." He also noted a well formed bowel movement on the morning of admission that was associated with dark blood on the toilet tissue, without gross blood in the toilet bowl. In the past, he has taken Excedrin 250 mg (aspirin+acetaminophen+caffeine) for abdominal pain, which has transiently improved the pain, but he states that he did not take it this time because his PCP advised against it. The pain was slightly improved with rest and lying on his stomach. He denies recent fevers, chills or night sweats, though he states that he does occasionally experience these symptoms in the setting of such episodes; he last experienced a fever several weeks ago. He also notes a 15 lb weight loss since January which he attributes to poor appetite, and increased fatigue. He denies diarrhea at this admission but states that he has frequently had grossly bloody diarrhea during the 4 prior admissions. He also hematemesis, changes in the caliber of his stools, prior history of hemorrhoids or anal fissures, oral ulcers, dysphagia or odynophagia, history of liver disease or jaundice. In addition, he denies recent travel history, joint pain, eye problems, dysuria, history of nephrolithiasis, or periorbital or lower extremity edema.

Of note, the patient states that his 4 prior admissions to OSHs were nondiagnostic. He states that his last colonoscopy and EGD 1 year ago were inconclusive, that a skin biopsy showed "vasculitis," and that repeat urinalyses have shown persistent hematuria and proteinuria, though he has never had a renal biopsy. In addition, he was started on mesalamine controlled release in January during admission to OSH, which reportedly worsened both his abdominal pain and rash. He presented to HUP yesterday morning in the hope that we could provide him with a definitive diagnosis and treatment.

In the ED, he was given hydromorphone for pain control (1 mg IV x2, 2 mg IV x2), along with ondansetron (4 mg IV x1) for nausea. Labs were significant for a CRP 1.3, ESR 67, ALT 120, and a UA + for protein and blood, without leukocytes, nitrates, or ketones. CT was performed, which showed bowel wall thickening, fat stranding and engorgement of the vessels involving the terminal ileum as well as the descending colon, most pronounced in the sigmoid, along with a 1 cm x 1 cm organizing fluid collection w/o pneumoperitoneum or abscess, most likely consistent with Crohn's disease.

**PMH:**

Asthma (multiple hospital admissions until the age of 7, he has no memory of intubations, no MDI is currently prescribed and he is only mildly symptomatic during humid weather, which is relieved by sitting in an air conditioned room)

? vasculitis (reported skin biopsy 1 year ago at OSH)

? glomerulonephritis (reported hematuria and proteinuria on prior microscopic U/A)

**PSH:**

Tendon repair to right hand for bar fight (2001)

**SH:**

Works as the manager of BMW retail department. Lives with his parents, completed high school.

Sexually active, states that his last HIV test was 1 year ago (result negative, per patient) and that he has never been treated for STDs. Occasional alcohol use, drinks beer a few times a month. Remote 3 year smoking history of 3-4 cigarettes per day, quit 5 years ago. Remote history of ecstasy and marijuana use (9 years ago), denies IVDU.

**FH:**

Paternal cousin with celiac disease. Mother with hypertension. Paternal aunts and grandmother with history of lung and "brain" cancer. Pertinent negatives – no known family history of IBD, vasculitis, GI malignancy.

**Meds:**

Occasional Excedrin – aspirin+acetaminophen+ caffeine (last dose 6 days PTA, 500 mg)

**Allergies:**

- 1) penicillin (hives, swelling) – no exposure since childhood
- 2) amoxicillin (hives, swelling) – no exposure since childhood
- 3) erythromycin (hives, swelling) – no exposure since childhood
- 4) cefaclor (hives, swelling) – no exposure since childhood

**ROS:**

**General:** As above

**Skin:** as above

**Head:** Denies headaches, history of seizures, head trauma

**Eyes:** Denies blurry vision, double vision, pain or difficulty seeing

**Ears:** Denies difficulty hearing, tinnitus, dizziness

**Nose:** Denies difficulty smelling, epistaxis, or history of polyps

**Throat:** Denies sore throat, neck masses or swollen lymph nodes

**Cardiac:** Denies chest pain, palpitations, orthopnea, history of murmur

**Pulmonary:** Denies cough, wheeze, shortness of breath with exercise

**GI:** As above

**GU:** As above

**Endocrine:** Denies history of DM or thyroid disease

**Heme:** Denies history of DVTs, increased bleeding or bruisability, history of anemia or thrombocytopenia

**Psych:** Denies current depression or anxiety



**Neuro:** Denies weakness, paralysis, numbness or tingling in extremities, hx of migraine or CVA

**MS:** Denies fractures, joint or muscle pain

**PE:**

**General:** Caucasian man, WNWD, uncomfortable appearing and irritable, lying in bed

**VS:** 98.1 (afebrile), HR 79s-80s, BP 139/75 RR 16 100% RA

**HEENT:** NC/AT, PERRLA, EOMI, sclera anicteric, no evidence of uveitis or episcleritis, conjunctiva pink and moist, no periorbital edema or facial swelling, neck supple, without cervical adenopathy or thyromegaly, no oral ulcers appreciated

**Skin:** diffuse, nonblanching petechial rash on flexor surfaces of arms, extensor surfaces of legs, and trunk (sparing face and back), no decreased capillary refill or tenting

**Lungs:** lungs clear to auscultation and percussion, no rales or rhonchi

**Cardiac:** regular rate and rhythm, nL S1S2, no murmurs, rubs or gallops

**GI:** diffusely tender, most prominent in RLQ, with voluntary guarding, no rebound, mild distention, +BS, no hepatosplenomegaly or abdominal masses appreciated

**Neuro:** CNs II-XII grossly intact, strength 5/5 UE and LEs, full range of movement, nL DTRs, sensation grossly intact to all modalities

**Extremities:** no clubbing, cyanosis, or edema appreciated.

**Data:**

**CBC (in ED):** WBC 9.7, Hgb 13.9, Hct 41, platelets 371. Differential: 75.3% PMNs, 16.2% lymphs, no bands, 7.1 monocytes, 0.8% eosinophils, 0.7% basophils

**Lytes (in ED):** Na<sup>+</sup> 143, K<sup>+</sup> 4.3, Cl<sup>-</sup> 104, HCO<sub>3</sub><sup>-</sup> 28, BUN 14, Creatinine 0.8, Glucose 107

**LFTs (in ED):** ALT 120, AST 43, Total bili 0.8, Alkaline Phosphatase 70, amylase 40, lipase 70

**UA (in ED):** pH 7.0, + blood, + protein, - nitrate, - leuk esterase, - bacteria  
CRP 1.3, ESR 67

**CT (in ED):** Colitis involving the TI as well as the descending colon from the level of the splenic flexure to the sigmoid, most pronounced in the sigmoid, associated with fat stranding, bowel wall thickening, and engorgement of adjacent vessels. This is most likely secondary to Crohn's disease in a patient of this age, with infection and ischemic colitis less likely. Early 1 cm x 1 cm organizing fluid collection is visualized in the sigmoid, without pneumoperitoneum, frank abscess formation or secondary inflammation of adjacent structures.

**Summary:**

In summary, Mr. Rafferty is a 25 year old man who presents with 6 days of acutely worsening abdominal pain, nausea, vomiting, a diffuse nonblanching petechial rash, and "dark urine" in the setting of a 3 year history of a waxing and waning course of identical symptoms, which is most likely secondary to Crohn's disease on the basis of CT findings of skip lesions, transmural inflammation and fat stranding. Vital signs are within normal limits. Physical exam findings are significant for diffusely tender abdomen most pronounced in the RLQ, with voluntary guarding, no rebound, and a diffuse nonblanching petechial rash most pronounced on his trunk, arms and legs. Laboratory studies reveal a UA positive for blood and protein, normal amylase and lipase, and a normal WBC and hemoglobin. CT findings suggest colitis involving the TI through the descending colon, most pronounced in the sigmoid, with small organizing fluid collection.

**Problem List:**

- 1) Abdominal pain/n/v

- 2) Hematuria/proteinuria
- 3) rash
- 4) weight loss

**Differential Diagnosis: Abdominal Pain/n/v (+/- hematuria and rash)**

- 1) Crohn's Disease – This is the most likely diagnosis, given the classic findings of abdominal pain, nausea/vomiting, intermittent fevers, and weight loss. The CT findings of bowel wall thickening, fat stranding, and vascular engorgement from the TI through the descending colon, along with an organizing fluid collection, are also consistent with the diagnosis, since the transmural inflammation associated with Crohn's disease predisposes patients to stricturing, fistula formation, and abscess. The patient's petechial rash could be associated with Crohn's, since patients can present with vasculitic findings, though skin findings of erythema nodosum and pyoderma gangrenosum are more common. The hematuria and proteinuria present on macroscopic UA in the ED (and by report) have yet to be confirmed with microscopic analysis, and warrant further work up. Should these findings be confirmed on microscopic U/A, they would be harder to subsume under the diagnosis of Crohn's disease. A vasculitis secondary to IBD could possibly present with a glomerulonephritic picture. In addition, patients with Crohn's disease are predisposed to form calcium stones secondary to malabsorption of free fatty acids. This patient has terminal ileal disease on the basis of CT findings, and therefore it is conceivable that calcium oxalate stones could be causing persistent abdominal pain associated with hematuria/proteinuria. Further work up is warranted.
- 2) HSP – The triad of petechiae, abdominal pain, and nephritis in a young man could be diagnostic of HSP, a relatively uncommon IgA nephropathy. The CT findings, which are virtually diagnostic of Crohn's disease, would argue against the diagnosis, but the reported history of hematuria and proteinuria, along with a skin biopsy suggestive of vasculitis, might support it. In addition, the patient's waxing and waning course is less suggestive of HSP, since patients with the disease classically present following a URI with acute symptoms, which resolve spontaneously. The Diagnosis of HSP is accomplished by skin or kidney biopsy with IgA immunofluorescence staining; serum IgA levels are nonspecific but often elevated. Since this disease could potentially explain all of this patient's findings, we should at least keep it in the differential pending results of the microscopic U/A.
- 3) PAN – Polyarteritis nodosa, an uncommon systemic vasculitis characterized by necrotizing inflammation of small and medium sized arteries, is a possible diagnosis in this patient given his symptoms of hematuria, abdominal pain, and rash. Patients with PAN commonly present with nausea, vomiting and abdominal pain secondary to bowel infarction, arthralgias and myalgias, hematuria secondary to glomerular involvement, and a palpable purpuric rash. In late stages of the disease, arterial biopsy commonly shows fibrinoid necrosis with a chronic inflammatory infiltrate. The patient's constitutional symptoms of malaise and weight loss might be consistent with the diagnosis, which is suggested by a positive p-ANCA test. 30% of patients are also hypergammaglobulinemic.
- 4) Cryoglobulinemia- This is a possible, though less likely, diagnosis in a patient who presents with abdominal pain, hematuria and a petechial, vasculitic rash. Cryoglobulinemia is an immune complex mediated disease whose sequelae are secondary to hyperviscosity and thrombosis. The disease is most commonly associated with Hep C positive patients, though it is occasionally seen independently or in association with other autoimmune diseases including SLE. Patients commonly present with hypocomplementemia, in particular with low C3 levels, and often with a monoclonal

IgM spike on serum protein electrophoresis or a positive rheumatoid factor. If other studies are negative, it might be worth checking complement levels or an SPEP.

- 5) Nephrolithiasis – The patient's reported "dark urine" associated with intermittent fevers, and abdominal pain might support this diagnosis, though the absence of pain with urination, flank pain, and pyuria would likely argue against it. In addition, the CT findings are unlikely to be consistent with a diagnosis of UTI, though the diagnosis could still be possible (as detailed in the consideration of calcium oxalate stones), since a patient could present with multiple problems at the same time.
- 6) Malignancy (colon, ileum)– This is lower on the differential, given the lack of BRBPR, the CT findings, and the normal Hemoglobin. But the diagnosis should still be considered given the patient's fatigue, weight loss, and change in bowel habits, along with his recurrent abdominal pain. Given the likelihood of the diagnosis of Crohn's disease in this case, the patient will require routine surveillance for malignancy, since in Crohn's disease the risk of malignancy is increased in proportion to episodes of active disease.
- 7) Ulcerative Colitis – Given the specific findings on CT, this is an extremely unlikely diagnosis, since UC would likely evidence CT findings of continuous inflammation beginning in the rectum and moving proximally (not skip lesions), without terminal ileal involvement, and with inflammation limited to the mucosa. In spite of this, the patient's presenting symptoms of abdominal pain, bloody diarrhea, nausea and vomiting could suggest the diagnosis. The disease is also associated with an elevated ESR and can be diagnosed on the basis of colonoscopy findings consistent with mucosal (not transmural) inflammation.
- 8) Chronic mesenteric ischemia – this is an unlikely diagnosis in a patient of this age, found more commonly in elderly patients who develop severe abdominal pain after eating and weight loss, nausea, vomiting, and diarrhea. In addition, the patient is without cardiovascular risk factors and did not evidence an anion gap on admission. Chronic mesenteric ischemia most often presents with an elevated lactate, which would manifest in an increased anion gap.

**Plan:**

**Problem 1:**

- 1) U/A with microscopic analysis
- 2) Obtain OSH records – EGD/SBFT/colonoscopy, U/A, dermatology biopsy
- 3) AM Labs – daily CBC with differential, electrolytes, glucose
- 4) GI consult
- 5) Nutrition consult
- 6) pain control – hydromorphone seems to be controlling pain, continue as necessary
- 7) ondansetron PRN to alleviate nausea
- 8) IVF for hydration
- 9) monitor for fevers, leukocytosis with left shift, decompensation that might suggest abscess formation, in which case we would likely consult IR for drainage

**Problem 2: Hematuria/proteinuria –**

**Differential Diagnosis/Discussion:**

This could be secondary to the underlying Crohn's disease or any of the above mentioned diagnoses and warrants further work up with a microscopic U/A. The differential diagnosis for a glomerulonephritic picture associated with abdominal pain has been detailed above, but it is also

worth considering other diagnoses consistent with a glomerulonephritis, since multiple diagnoses can occur in the same patient.

- 1) SLE - lupus nephritis as a possible, though unlikely, cause of his symptoms. Lupus nephritis is more common in young women, and would be most likely to present with other SLE symptoms, including a malar rash, discoid lesions, photosensitivity, along with arthralgias and myalgias. However, the patient's increasing fatigue, 15 pound weight loss, and elevated ESR and CRP might be consistent with SLE, though they are certainly insensitive markers for the diagnosis. It is probably worth checking an ANA to rule out the diagnosis.
- 2) Membranoproliferative glomerulonephritis – This immune complex mediated disease presents with a glomerulonephritic picture of hematuria/proteinuria but would not explain the patient's other symptoms of abdominal pain and skin involvement. Patients with MPGN commonly have low C3 and C4 levels due to immune complex deposition with activation of complement. Pending other studies, complement levels might be warranted.
- 3) The differential for a glomerulonephritis with vasculitis also includes Wegner's granulomatosis and Goodpasture's disease, which are both unlikely given the absence of pulmonary and upper respiratory findings.

**Plan problem 2:**

- 1) microscopic U/A
- 2) follow Hgb/Hct
- 3) Renal consult
- 4) Rheum consult

**Problem 3 rash –**

**Differential diagnosis discussion:**

This is most likely a vasculitis secondary to the Crohn's disease, though other causes of a petechial, nonblanching rash include thrombocytopenia, which is ruled out by the normal platelet count; infectious causes, which are ruled out by the normal CBC; syphilis, which is unlikely given the patient's reported sexual history, and various vasculitides, including those mentioned above. Further work up should proceed pending the GI and UA results, which might help contextualize the skin findings in this patient. Pending those studies and retrieval of the patient's skin biopsy, which reportedly showed "vasculitis," further work up might be necessary.

**Plan problem 3:**

- 1) derm consult pending results of other studies (rash appears to be improving).

**Problem 4: weight loss –** This is most likely secondary to decreased appetite and oral intake, but nutrition consult is warranted as we wait for further studies.

- 1) nutrition consult
- 2) encourage PO intake as tolerated

**PPx –** SQH, ranitidine

## 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.

## 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

#### 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!

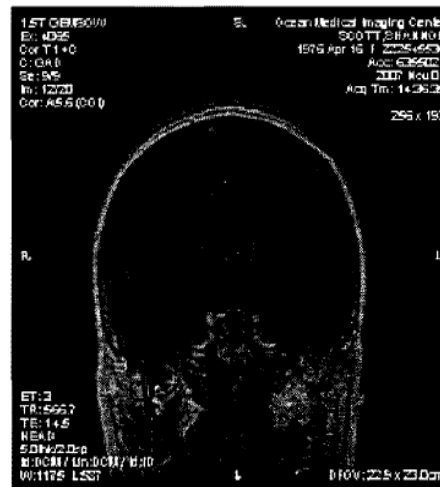
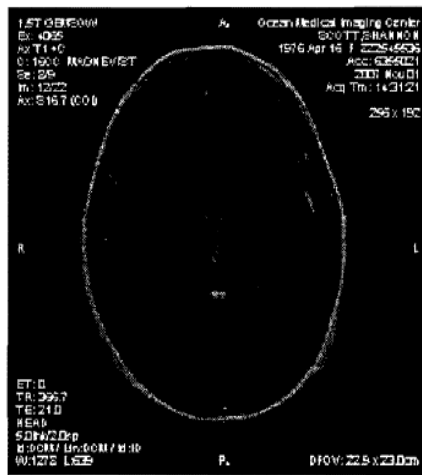
## A Case of Acquired Hydrocephalus

**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:

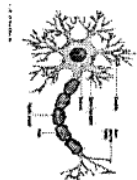


### Differential Diagnosis of Hydrocephalus:

- 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 riluzole therapy?* \_\_\_\_\_

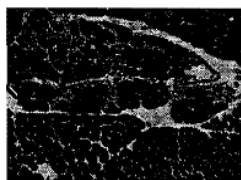
**Case:** A 62 year-old white male office worker with a history of HTN, hypothyroidism, and CAD s/p stent placement presents with left foot drop and hyperreflexia at the left ankle. Patient notes no other weakness and denies any sensory or autonomic symptoms. No other abnormalities are present on exam. 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)

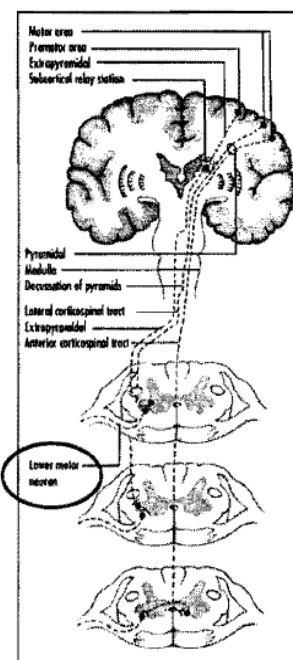
### Pathophysiology:

- 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 ubiquitinated inclusions

- Etiology is unknown—some proposed mechanisms:
  - Superoxide dismutase type 1 mutations (toxic gain of function vs. abnormal protein aggregation)
  - Excitotoxicity (excessive glutamate)... riluzole is anti-glutamnergic!
  - 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

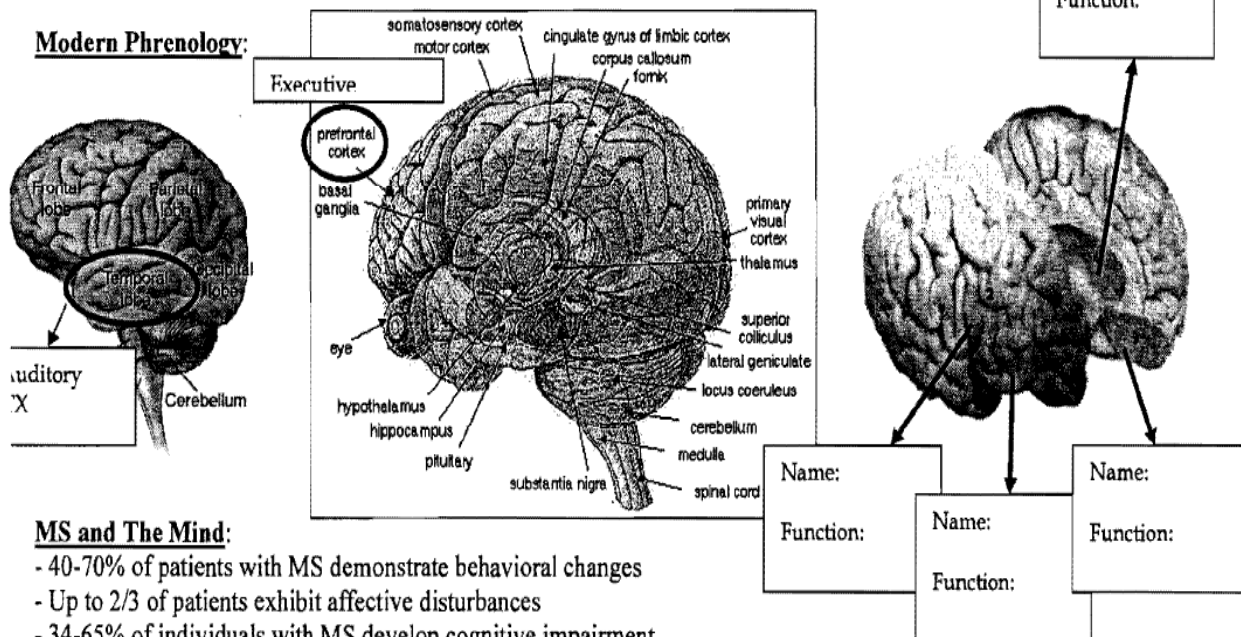


# The Psychiatric Manifestations of Multiple Sclerosis (MS)

## 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 in 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 (10-19% 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 Phrenology:



## 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:

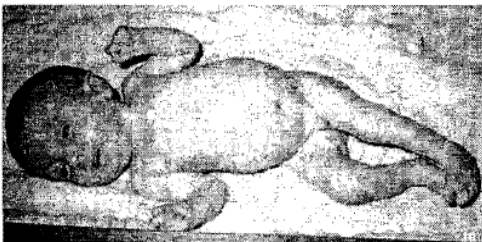
Trisomy 21 can happen from 3 different cytogenetic abnormalities:

- Nondisjunction (94% of cases)
- Unbalanced Robertsonian translocation (3-4%)
- Mosaicism (2-3%)



#### Trisomy \_\_\_\_:

- Midline defects (face and forebrain): holoprosencephaly, microcephaly, seizures, severe MR, severe eye defects, cleft



#### Trisomy \_\_\_\_:

- MR, hypertonia (scissoring), delicate facial features, clenched hands with overlapping digits, rocker bottom feet



#### Trisomy \_\_\_\_:

- 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

### Health Supervision for Patients with Down Syndrome

<b>Growth</b>	<ul style="list-style-type: none"> <li>- Measure at all health supervision visits</li> <li>- Watch for obesity or excessive weight gain (e.g. hypothyroidism) or loss (e.g. celiac disease)</li> <li>- Promote physical activity and caloric intake less than generally recommended for age</li> </ul>
<b>GI</b>	<ul style="list-style-type: none"> <li>- Evaluate for GI abnormalities at birth (duodenal atresia, imperforate anus, TE fistula)</li> <li>- Screen for celiac disease beginning at age 2</li> <li>- Remain aware of increased risk of Hirschsprung's</li> <li>- Screen for feeding difficulties/aspiration risk</li> </ul>
<b>Pulmonary/Sleep</b>	<ul style="list-style-type: none"> <li>- Screen for obstructive sleep apnea at all visits after 1 year of age</li> </ul>
<b>Endocrine</b>	<ul style="list-style-type: none"> <li>- Thyroid function tests at birth, 6 months, 12 months, and then annually</li> <li>- Monitor for type 1 diabetes</li> </ul>
<b>ENT</b>	<ul style="list-style-type: none"> <li>- Hearing screen at neonatal visit (BAERs and otoacoustic emission if necessary) and evaluate every 6 mos. until age 3 and then annually</li> </ul>
<b>Ophthalmology</b>	<ul style="list-style-type: none"> <li>- Full assessment to monitor for strabismus, nystagmus, cataracts before 6 months</li> <li>- Assess acuity at least every 2 years until age 5 and then annually after age 5</li> <li>- Screen for keratoconus and lens opacities yearly after age 5</li> </ul>
<b>Cardiology</b>	<ul style="list-style-type: none"> <li>- Echocardiogram at birth to monitor for CHD</li> <li>- Periodic evaluation for mitral valve prolapse and aortic regurgitation in adolescence/adulthood</li> </ul>
<b>Hematology</b>	<ul style="list-style-type: none"> <li>- CBC with differential at birth (myeloproliferative disorders/polycythemia)</li> <li>- CBC annually between 13 and 21 years to monitor for abnormalities</li> </ul>
<b>Orthopedics</b>	<ul style="list-style-type: none"> <li>- Monitor calcium and Vitamin D intake and supplement if necessary (osteopenia)</li> <li>- 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)</li> <li>- Screen for other orthopedic disorders</li> </ul>
<b>Dental Hygiene</b>	<ul style="list-style-type: none"> <li>- Encourage good hygiene and dental visits every 6 months</li> </ul>
<b>Dermatology</b>	<ul style="list-style-type: none"> <li>- Screen for skin disorders, especially in adolescence (folliculitis is most common)</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>- Screen to ensure appropriate services and supports are in place</li> </ul>
<b>Behavior/ Psychiatry</b>	<ul style="list-style-type: none"> <li>- Screen for psychiatric/behavioral disorders, especially ADHD, conduct disorder, depression, autism, and aggressive behavior</li> </ul>
<b>Sexuality</b>	<ul style="list-style-type: none"> <li>- Address puberty and sexuality in adolescent visits (including menstrual hygiene, PMS, etc. for females)</li> <li>- Provide information about contraceptive options to females</li> <li>- Screen for sexual abuse, particularly for females</li> </ul>

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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

Relative frequency of primary glomerular diseases causing nephrotic syndrome (%)			
	Children	Adults <60 yrs	Adults >60 yrs
Minimal Change	76%	20	20
Focal Segmental glomerulosclerosis	8	15	2
Membranous glomerulonephritis	7	40	39
Membranoproliferative glomerulonephritis	4	7	0
Other diseases	5	18	39

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 hypoalbuminuria*
  - 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 dipyridole (some evidence it might help for proteinuria too); heparin/warfarin only if known thromboembolic event

**Sources:** UpToDate online

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