

# *Technology*



## **Useful Websites:**

Email: [email.mc.vanderbilt.edu](mailto:email.mc.vanderbilt.edu)

Starpanel: [starpanel.mc.vanderbilt.edu](http://starpanel.mc.vanderbilt.edu)

PACS: [pacsweb2.mc.vanderbilt.edu](http://pacsweb2.mc.vanderbilt.edu)

VPIMS: [vpims.mc.vanderbilt.edu](http://vpims.mc.vanderbilt.edu)

Portal: [portal.mc.vanderbilt.edu](http://portal.mc.vanderbilt.edu)

KM: [knowledgemap.mc.vanderbilt.edu](http://knowledgemap.mc.vanderbilt.edu)

## Introduction

Welcome to the technology section of the Oar. There is a ton of different technology, both part of the Vanderbilt system and third party, which you will need to deal with in your third year. Your level of expertise and familiarity with it can either make your life more difficult or save you time and make you an efficient, organized VMSIII machine. The goal of this section is to provide an overview so you know where to start, as there is far too much information to be housed in this pocket-sized guide. Enjoy!

### Vanderbilt Helpdesk

343-4357 or 3-HELP

The Helpdesk is literally your best friend. One of your passwords won't work? Call the Helpdesk. Can't sync your PDA with the VU system? Call the Helpdesk. Program this number into your cell. Write it on an index card you won't lose. Whenever I am having any tech problem, whether it directly applies to the hospital or not, I start here. There is usually a very short wait, especially after business hours, it is free, and the staff is super-helpful. If this is the only thing you take from this section, I have earned my paycheck (which is \$0).

## WizOrder

This is your gateway to everything on the VUMC network. When you log into any clinical workstation, This is the first screen that you see. We're going to touch on the features of this program that are most relevant to VMSIIIs in this section.

### Scratch Census

This is the "roster" of patients that are followed by your team. I would say that this is the most important feature to understand as a student, because if your scratch census does not match that of your team, you will undoubtedly be lost during rounds. The best way to establish a scratch census is to find your resident on day 1 of the service before rounds and ask which census they use. Some services

have a "group" census, others have you link to the resident, and rarely you will link to an attending. Then just click on the "modify census" box, and link to the correct census by either clicking Link to Group Census or Link to Another User. The WizOrder page will refresh (if it does not, click the "refresh" box on the main screen. There will now be a list of patients in the middle of the page, and that is your scratch census.

Linking is a one-way deal - you cannot make changes which affect your resident's or the group's census. You can add patients to your census but cannot delete patients from your resident's census. Similarly, if your resident adds or removes a patient from his or her list, your list will automatically reflect that change. You also have the option to "copy" your resident's census, which allows you to selectively create your own census with the same patients as your resident, but you can edit your list freely and your list will not be updated should your resident change her list.

If the patient has a blue "I" next to their name, they are an inpatient. If there is a green "O," they are an outpatient. Outpatients are usually patients who have been discharged but do not have a "discharge summary" note on the chart from resident.

## **Patient Lists**

Once you have linked your scratch census, you can print out the Patient List. This is the piece of paper that the residents carry around, feverishly scribbling notes to themselves and checking off boxes of things to do before their day is done. Print a patient list every day, and always have it on rounds. It helps you follow along, and on walk rounds it will make sure that you know where the next patient is. To print the list, click the "Printouts" button, and then click "Patient List From Scratch Census." You can then choose the spacing, if you want to skip outpatients, and if you want to selectively pick patients. As far as the spacing, if you have a big list, you want more names per page. You will figure out your patient list checklist and note style as the year goes on. For the first few days, just make sure you carry the list.

## **Current Meds and Results (CMRs)**

CMRs summarize all of the medications, vitals, and lab results on a single dual-sided sheet. They are tremendously helpful to have on rounds. Make yourself familiar with what information makes it onto the CMR and what does not. Some units still use some paper charting, so the vitals don't make it on. Some service-specific tests or values are not represented. That being said, having recent CMRs for at least the patients you are following will bail you out when you forgot to check on a value, or when that value wasn't up when you checked StarPanel before you pre-pre-rounded. To print CMRs, go to "Printouts" then "Current Meds and Results." To quickly print the entire scratch census (and a patient list), click on "CMR from scratch." Residents and attendings often want you to print extra copies for them. Ask on day one, then wow them with your WizOrder prowess.

## **Finding a Patient Who is Not on Your Census**

Sometimes you will see a patient in the ED who has not been admitted to the hospital yet, or a patient that is being transferred or for some other reason did not make the resident's or group census. That means you need to find them. Don't worry, it's not that difficult.

First, you need to know if the patient is in the hospital (inpatient) or in the E.R. or in transit (outpatient).

If you're looking for an INPATIENT (blue "I"), you can enter the last name in the box labeled "Patient Name" and search. Otherwise, you can click on one of the floors/nurses stations listed in a box on the right hand side of the screen. Once you see the patients name in the box on the left side of the screen, double click on the name, and choose "add to scratch census" from the menu.

If looking for an OUTPATIENT or someone in the ED (green "O"), start by clicking on the "Outpatient/ER" box on the right side of the screen. Enter as much patient info as you know for sure (be careful with spellings of last names). Medical record numbers are a big plus. Once found, add to your census as above.

## **Editing the Sign-Out Sheet**

Particularly on Medicine and Pediatrics, your team will sign-out at the end of the day to the team on call (aka “cross cover”), and tell them about the patients on their census. This is crucial, as the cross-cover team will be expected to make good management decisions during the night about patients they would otherwise know nothing about. To facilitate this, WizOrder provides a sign-out sheet with patient medication/allergy information, and a brief summary of the patient's hospital course. A med student can contribute greatly to the team by learning to edit the sign-out sheet for their patients. To do this, simply click “print-outs” and choose “sign-out sheet.” The program will offer you a list of names from your scratch census to choose from. Select your patients, and a separate window will be opened with 3 text-boxes per patient. The first box is identifying information, medications and allergies and is generated by WizOrder automatically. The second box is the area for hospital course, and must be entered by you and saved each day. The final box is the “to check” box, where you would enter special instructions, like having cross-cover check on labs or x-rays after you leave. Enter text in the second box for your patients, then click “save sign-out sheet” at the bottom of the entire window. For the record, “ntd” means “nothing to do”, and is the dream phase for any cross-cover team. Your resident will print a complete sign-out sheet when they are ready to leave. Going with them to “check-out” is a great way to learn about communicating essential medical information.

## **Entering Student Orders**

Early in the year, ask before starting to enter orders. Most teams will love your initiative and willingness to learn. Sometimes, if orders are entered during rounds or the census is very large, your team would prefer that you did not. "I'd like to learn how to enter orders, is this OK?" usually works. Likewise, some services want you to enter orders before rounds to show your formulation of a plan. Other times, they'd prefer that you only put them in after the plan has been discussed on rounds.

First, some background on student orders. You do not get full ordering privileges. When you put one in, it must be approved by a

resident. You are not allowed to modify certain orders, such as patient diet. That being said, be meticulous when you put in orders. Even though they must be reviewed, mistakes do happen, and while the burden of an incorrect order that is approved is unlikely to directly fall on the student, it is bad for patient care, bad for your team, and ultimately bad for your life. Garbage falls downhill, and we are on the bottom. Time to get off of the soapbox.

So now the nuts and bolts. Start by double-clicking on the patient's name, and select "Enter Orders." On the left hand side of the screen is the ADCVANDISML orders display with all the active orders for the patient listed. Any existing orders can be modified or discontinued by double-clicking on them and following the prompts.

Entering new orders for a new admission is a little more challenging, but there are a few tricks. First, use the pre-fabricated order outline sets. Type "admission" into the text-entry box and hit enter. In the upper-right box, look for an appropriate set of orders for your patient. The same is true if you type "discharge". The computer is even smart enough (or the programmers) to give you specific order sets for specific diseases. Type "asthma" into the text box, and "asthma exacerbation admit" orders will appear in the display box. The same is true of "eating disorders" and many other diseases.

Suppose you just want to enter in an order. First, you have to know what you want. Second, you have to know how to get the computer to give you what you want. The rule is counter-intuitive: don't be specific, be general. Give 3-4 letters of the word your looking for and hit "enter". Look for the right option in the right upper box. The computer knows both generic and trade names for drugs, but it's not good at guessing your bad spelling.

There's a lot of trial and error to putting in orders, but if you start trying early and have your resident show you some specifics you can actually save the team some time, which is rare for any medical student.

Once your orders are in, a yellow "S" will appear next to the patient name on Wiz . For your resident to cosign them, have him double-click the patient name to get into Wiz Order., then click the yellow 'cosign' box . Select all the orders and they will be added to the resident's order set. Then they can sign them like any other order.

# StarPanel

**starpanel.mc.vanderbilt.edu**

This is the patient's online chart, plus numerous add-on features. It is where you write your notes, look at past medical records, look up radiology reports, and follow lab values. You should have already received StarPanel training, and there is an online video that is worth reviewing before your first rotation.

There are numerous ways to find a patient in StarPanel. If you are at a clinical workstation, you can double-click on the patient's name, and then click on the "StarPanel" box. Done. If you are not at a workstation (such as in the computer lab), but the patient is already on your scratch census, go to the "Patient Lists" tab on the left-hand side, and click on "Scratch Census." If you know the Medical Records number, you can type that in the white box in the upper left-hand corner. You can type the name in this same box, however there are a lot of patients in the system, and you may need to sort it out by birthdate.

Once you have the patient on the screen, it's time to find out what you were looking for. The default shows every day the patient was in the Vanderbilt hospital system or had a clinic visit on the left, with all pieces of information from that day on the right.

## Looking Up Notes

I usually start with the search boxes. There are three search boxes at the top of the white part of the screen. On the left-most line, it will search the title of the note or the author's name. Thus, if you want and old H&P, type "history." If you want a clinic note, type "clinic." This is a quick way to start. Just a word of wisdom, if you want to know about a patient's past hospitalizations, search for discharge summaries, they are the highest yield. Sometimes, though, notes have strange titles, so this method is not fool-proof.

Now lets say you can't find what you want, but you know who wrote it. The next search line is for author, and this is very useful to find the pre-op clinic notes for a patient going to the OR, for example. On the right, there is the "FullText" box. This searches the entire body of each note for a specific phrase or word.

## **Looking Up Radiology Reports**

The best way to find radiology reports is to click on the white "Radiol" tab. All reports are listed. You can then search these results as above. There are also Tabs further up on the screen. These show other areas of the system. Below I will discuss a few of the most important tabs to know on day one. It is in your best interest to take some time during intersession or the first few days of your first rotation and navigate to see what is there.

## **Looking Up Laboratory Values**

Labs are one of the most important things for a medical student to follow. There are two main ways to find a patient's labs. First, you can go to the "Fastlabs" tab. This will show all major labs, chronologically organized. If you click on the green box with the name of the test in it, a list of only those tests will be shown. This is a very quick and useful way to follow trends in white blood cell counts, creatinine, or a host of other values. The other way to obtain lab values is to click on the "Labs" tab. This brings you to a menu of categories of lab tests. Click on the one you want, and off you go. Often times, though, this method is best for obscure tests that do not show up in FastLabs. Likewise, you may not know the category to look in. Have no fear. Click on the "where do I find lab tests" link on the right, and then type what you are looking for into the search box. It will then show you where to look.

## **Looking Up Vitals**

For vitals, go to the "Flows" tab and click "Adult Nursing Flowsheet" or "Peds Flowsheet." This has the vital signs, ins and outs, nursing comments, and certain lab tests. Some of this is repeated on the CMR. Remember, some units do not chart vitals electronically, so buyer beware.

## **Typing Notes in StarPanel**

So you've done your background research, seen the patient, done taken a history, done a physical, and put in admission orders. Now it is time to write your notes. Notes are written off of a template.

There are two main places to start.

The first is the "Notes" tab near the top of the screen. This will take you to a list of templates. Search for "Medical Student," and then click the "add" button of the one you want. This will add the template to a list of defaults on the right of the screen, so you can access it quickly. Then click on the template, and type away. The main notes that you will use are "Medical Student History and Physical," "Medical Student Admission History and Physical," and "Medical Student Progress Note."

The second place way you can write a note is from the "Forms" tab. These are templates that have individual boxes to fill in. Some rotations, such as Psychiatry and OB/GYN, use forms instead of notes. It really does not affect your life too much. The search and add functions are similar to that of the "Notes" tab.

Now for some general information on writing notes. Medical students are generally expected to only use templates with "Medical Student" in the title. Each rotation has very different expectations for H&Ps and progress notes, and I will defer to the individual sections in this guide. Some services still use paper charts. On progress notes, there is a "Reuse" feature that you can access through on the "Actions" menu in the upper right of the previous note. Some words of caution, however. The dates and time-relevant information will be wrong, so make sure to change it. Also, reusing too much of the previous text is highly frowned upon, and may be viewed as plagiarism and grounds for disciplinary actions.

## **Finding Radiographs**

All radiology studies are stored as digital images on a server called PACS. You can access PACS from any computer with internet access, but there are special "viewing stations" scattered throughout the hospital (Radiology reading rooms, MICU, ED, neuro ICU, trauma). There is a link to Pacs on the Wiz main screen, on the clinical workstation desktop, on StarPanel under the "Radiol" tab, and through the VMS portal. This will bring in the log-in screen. You type in your username, which is the same as your VUMC email username, and your password, which is different (this is annoying). From this screen, you can type in the MR number or the name of the

patient you are looking for, and then filter by date (which speeds the search). A tip: when typing a name, use the last name the the "^" character, then first name (smith^john). You then click on the study you want, view it, and see the report. There is also a split screen feature to compare films. To use this click one study from the list, hold the "control" key and click the other. Then go to display. There are a number of other features; trial and error and your resident's expertise are a good place to start.

If a report is not yet up on PACS but you want information about it, you have a couple of options. During business hours, you can call the radiology department and get an impression from a resident or, even better, you can go read it with them. Other times, you may just want the dictation. If so, you can call the dictation line. The number is 60106, followed by 100#, followed by the MR number and #. They talk fast, so be ready.

## **OR Schedule**

### **VPIMS - [vpims.mc.vanderbilt.edu](http://vpims.mc.vanderbilt.edu)**

This program gives you online access to the OR schedule, even if you are on a computer without StarPanel access. You can access VPIMS through the Windows desktop on the hospital computer, and you can also access it by logging in to the VMS portal. Clicking on the VPIMS icon opens an Internet Explorer browser with several more icons, and the only one you will use is the "VORS." You must log on using your email user name and password; not your Wiz username and password. Once you've logged in, you can look up the OR schedule for a particular date or location. This latter feature is particularly convenient on Gyn because all of the gyn surgeries will be on 4S, and it will be a very short list to sort through. On other services, you will likely be presented with a long list, and you will need to look for your service's surgeries based on attending name. Pressing Ctrl+F will bring up a search box.

### **StarPanel OR Schedule**

You can also access the OR schedule through StarPanel. There is a graphical representation of the ORs with the amount of time blocked

out for each. Access it through the "Patient Lists" the "OR schedule" buttons on the left of the screen.

## On the Web

### **Eskind Digital Library - [mc.vanderbilt.edu/diglib](http://mc.vanderbilt.edu/diglib)**

This is my starting point when looking for any medically relevant information. You can access the majority of the library catalog and a whole lot more. If you access PubMed through the Eskind site, you will have access to any article that Vanderbilt has paid for a licence to. You will get an excellent tutorial to PubMed from Dr. Sastre during your medicine rotation. You can also directly access journals. The one I find myself constantly using is the New England Journal of Medicine. They have some of the best new papers, excellent reviews, and a series of videos showing how to do bedside procedures (lumbar puncture, arterial line, etc). Also, there are a series of electronic books that include the "gold standard" reference textbooks in many fields. You know they have Robbins, but there is also Harrisons Internal Medicine, Swartz and Sabiston for Surgery, Gabbe (yes, our soon to be former Dean) for Obstetrics, and the list goes on. There are also more shelf/boards review type books, like the Current Diagnosis and Treatment series and the Pre-Test series. Early in the rotation, before you buy any books, check out what Eskind has.

### **Google**

I have to admit, I am a Google junkie. I use Gmail for the huge storage and fast search tool. I use Google calendar, which you can sync with your PDA using the free program GooSync (Google it). What I want to write about here, however, is the Google Office Suite. You need a Gmail user name and password to sign in, and then you can fire away. There is a word processor, spreadsheet program, and presentation program on the site. I prefer using this to the Microsoft products. There will come a time when you want to use one of these functions on a clinical workstation but will find they only have notepad. So try out Google Office. You can open it in your home/the computer lab, and then export the file as a Microsoft Office document (except for presentations). You can also collaborate with

others, share them over the Web, and quickly search using the familiar Google box. All I'm saying is give it a shot...what do you have to lose?

### **Hopkins-abxguide.org:**

see below in the PDA software section.

### **Epocrates:**

see below in the PDA section

## **PDA/Smartphone/iPhone...**

How much time you got? Everyone has a different opinion of whether you need to have one of these or not. As a disclaimer, I have a Windows-Mobile based smartphone, and I am reasonably happy with it. I'm going to provide a brief overview here of some of the common features, and some of the differences between platforms.

### **Common Features**

The vast majority of these devices have the same core features, with some bells and whistles that make each one a unique snowflake. You can check your email, manage your calendar, manage a task list, surf the web, and jot down notes on pretty much any of them. One exception: if you do not have WiFi or a phone service built in, you can't do email or the web. If you are going to get a PDA, I would recommend against one without some form of connectivity. The other big thing is that you can add medical software (see below).

The main difference between the genres is whether it is a standalone PDA or a PDA/phone in one. There are some pros and cons to each approach. The PDA allows you to carry a separate phone, which will probably be smaller than the combo models. They tend to have larger screens as well. The combo models allow you to consolidate both functions into one. You end up carrying fewer things in your white coat (always a plus) and have one fewer thing to remember in the morning. A word of caution, however. Not all phone services work in the hospital. Sprint works nearly everywhere, as there is a tower on

the roof. Verizon works some places. AT&T is pretty bad. Before you drop a bunch of loan money on the latest hot phone, you may want to walk around with your regular cell or that of a friend who has the carrier you are considering to get a feel of where it won't work.

### **And Now for the iPhone...**

I don't have the iPhone. One of my classmates, who I consider quite tech savvy and pretty reasonable overall sent me this blurb at my request. Make of it what you wish (the iPod touch is basically the iPhone with WiFi but without the phone service):

"If you're thinking about getting a PDA for your third year, you should think about getting an iPhone or iPod Touch. It's definitely a quirkier PDA than most of the other options, with some significant benefits and drawbacks. Keep in mind that much of this review may change in late June, when Apple will begin releasing third-party applications (like Epocrates and Sanford) for the iPhone and iPod Touch, and in July when they release the new model.

#### **Pros:**

- Syncs flawlessly with Macs out of the box, unlike Windows Mobile or Palm devices.
- Reduces your total number of widgets (especially if you're an iPod junkie).
- Best mobile browser available
- Extremely stable, crashes and errors are rare.
- Never be without music and movies!

#### **Cons:**

- AT&T service is spotty inside the hospital; plans are expensive
- iPod Touch users (but not iPhone users).
- Initial purchase is expensive (but less than phone + PDA + iPod).
- You either love or hate the keyboard; don't buy until you're sure you like the keyboard.
- AT&T data service (used when you don't have WiFi) is slower than Sprint/Verizon
- No expansion slot for additional memory, mediocre camera."

## Medical PDA Software

Now that you have your fancy new machine, time to put it to work for you. There is plenty of medical software available for all of these platforms, some free, some at a cost, and some quasi-free (see below).

### Free Software

- ***Epocrates***: this is a great free drug program. You should get it. Enough said. Also available for free on the web
- ***Diagnosaurus***: useful differential diagnosis tool.
- ***MedMath/Medcalc***: Medical calculator that is occasionally useful.
- ***John Hopkins Abx-Guide***: free for Palm, fee for other platforms through Skyscape (see below). An excellent antibiotics guide, I vastly prefer it to The Sanford Guide. Also available for free on any desktop computer through <http://www.hopkins-abxguide.org>.

### Pay (or Quasi-Free) Software

Skyscape: this is service that basically converts popular reference books to PDA format. These are available for Palm, Windows Mobile, iPhone, and Blackberry. There is a cost involved, however some unscrupulous individuals out there have found ways around this. I am not advocating this, but if you must explore ask your classmate who was a Computer Science major in undergrad or the guy with the tricked out PDA. Here are some of the blue chippers (that means good ones):

- ***Harriet Lane***: the reference that the Peds residents carry with them. The only PDA reference you need for Peds.
- ***Pocket Medicine***: the Harvard handbook of medicine (The "Red" or "Blue" book, depending on the edition.) Best resource for medicine available on the PDA.
- ***AHFS-DI***: the best drug guide I have ever seen. Goes into clinical trials, mechanism, the whole nine yards.
- ***5-Minute Clinical Consult***: no-nonsense guide to a huge variety of diseases. Also has a search function, where you can check boxes for each sign or symptom the patient has, and it will spit back a differential diagnosis. Available (minus the signs and symptoms part) from the Eskin Digital Library as well.

- **5-MCC Infectious Disease Guide**: useful guide to what bugs cause what disease, and how to treat. Antibiotics section weaker than Hopkins or Sanford.
- **Recall series** (Medicine, Surgery, Peds, Neuro, Psych, OB/GYN): same as the popular series of books, but PDA format is very useful for rapid-fire quizzing when you only have a few minutes.
- **On Call series** (Medicine, Surgery): allows you to search by chief complaint and then goes through the work-up. Good for call nights.

## Final Thoughts

Here's my bottom line on PDAs. If you are a tech person, or are really disorganized and think one will help, go for it. If not, play around with your classmate's PDAs, see if you think you need it, and then decide to buy it or not. There are plenty of computers in the hospital (well, besides the psych hospital anyway), and you can look everything up on the Eskin Digital Library that you will need.

I hope you have found this section helpful. If you have any questions or comments please email me at [brian.s.wasserman@vanderbilt.edu](mailto:brian.s.wasserman@vanderbilt.edu).

