**UNC Hematology and Oncology Fellowship**

***Unofficial* Guide to Daily Work and Tips to Thrive**

**Introduction:**

This guide was created by and for the fellows. It is meant to be a work in progress, evolving over time. Please update, change, add, and delete information as you see fit to help make it better for future fellows. The document is kept on the shared drive. If you do edit it, please save a dated backup copy in the “Fellows/Backup” folder.

The first year of fellowship can be difficult given the heavy clinical nature, but you will get through it! The payoff will come during your second and third year when you are able to better tailor your schedule to your specific career goals.

|  |  |  |
| --- | --- | --- |
| **Name** | **Number** | **Comments** |
| Hospital Operator | 974-1000 | Return patient calls, Directory |
| 4-Onc | 974-8401 | Inpatient nursing station |
| 4-Onc Charge RN | 974-6911 | Bed status |
| BMT Unit | 974-8280 | HUC |
| Carolina Consult | 974-6318 | Outside consults (all done by attending now) |
| Chemo pharmacy | 974-8240 | Fax 966-0304 |
| Core lab | 974-2361 | Smears! |
| Cytogenetics | 974-1790 |  |
| Eastowne Hematology Clinic | 974-2695 | Benign Hematology Clinic |
| ER | 974-4721 |  |
| Fluoroscopy | 974-9399 | For fluoro-guided LP coordination (Jennifer) |
| Heme path | 974-8321 | Marrow results |
| Hospitalist Office | 974-1901 | Can call for BMT signout |
| Infusion | 974-8200  974-6951 | 3rd floor  Infusion charge nurse |
| Microbiology lab | 974-1805 |  |
| Molecular Genetics | 974-1476 |  |
| **On Call Virtual Pager** | **123-7029** | **On-call fellow, sign on** |
| Phlebotomy | 974-5446 |  |
| Special Heme | 974-8322 | Call when ready to do a bone marrow biopsy |
| Special Coags | 974-8326 | Coagulation lab – test results |
| Terri King | 966-1996 | Program Coordinator |
| Transfer center | 974-4500 | Outside transfer calls, option 2 |
| Transfusion Medicine | 974-1780  966-4011 | Blood Bank, Apheresis |
| VIR | 974-0420 | Interventional Radiology |
| Vocera (nurse calls) | 984-215-4502  \*33 if in hospital | To return pages from nurses when outside of hospital  You can also use to call units, core lab, heme path, etc |

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**I.** **Pagers and Phone Numbers**

974 and 215 numbers have 984 area code, 966 and 843 numbers have 919 area code

**This will soon be changing slightly with the implementation of MyUNC Directory**

**To Page Someone:**

● The computer paging system is called WebExchange (link on desktop is “directory”). This can also be accessed from home by using the Citrix Receiver (see separate Information Technology page). *http://directory.unch.unc.edu/webdirectory/*

**To Return a Page:**

* To return a page from a 5 digit number leading with 4, such as 41234, dial: 984-974-1234
* To return a page from a 5 digit number leading with 5, such as 51234, dial: 984-215-1234
* To return a page from a nurse with only a room number or a name, use Vocera below (984-215-4502)

● **Sometimes nurses will page you to their Vocera by putting their name and callback number 5-4502 in the page. If you are in the hospital, you can dial 5-4502 and say the name when prompted. If calling from outside of the system, you should call 984-215-4502 and say their name when prompted.**

**To change pager status:**

● Call the operator and ask them to change it for you, or

● Call 984-974-7272 (or 4-7272 from inside the hospital) and follow the prompts to change the status (such as forwarding the consult pager). Example: you want your pager to be covered by the “on-call fellow: dial your pager #, select “2” to change page status, select “8” being covered by, then enter the on-call fellow pager number. When you want to cover your pager again, dial 4-7272, select “2” to change page status, then select “1” to be available for page.

**“Virtual” On-Call Pager for all in-patient services**

● Instead of having a physical pager to swap every day, we have a “virtual pager,” meaning a pager number that is forwarded to the personal pager of the fellow on the service (BMT, Malignant Hem Consult, Onc Consult, Coag Consult). Day in-patient fellows (Malignant hem, Coag, Onc Consult) will cover their respective virtual pager at 8 AM - 5PM Monday - Friday. BMT coverage is from 7 AM – 7 PM.

● 123-7029 pager - This pager is reserved for after-hours outpatient calls. The fellow on-call for the coming night will sign in to this pager at 8AM every morning.

● Night calls - The respective day fellows will transfer their service virtual pager to the fellow on-call for the night when they leave work for the day. This is to help out the on-call fellow so that he/she does not need to pull 3 virtual pagers at 5PM.

● Weekends - Fellow on-call for BMT/Onc Consults will cover the BMT (123-7265), Onc Consult (123-7246) pager and transfer center virtual pager. Fellow on-call for Coag/Malignant Hem will cover the Coag (123-7245) and Malignant Hem (123-7247) virtual pagers. The third fellow will cover the outpatient virtual pager (123-7029) from 8 AM - 4 PM and then forward the pager to the person covering BMT at 4 PM.

**● On Holidays (Memorial Day, Labor Day, Thanksgiving, etc) - The person assigned for overnight coverage will cover the Outpatient (123-7029) pager beginning that morning at 8AM. We recommend that those who are on inpatient services split the call coverage amongst themselves to decrease call volume on any one fellow.**

**Using your Phone as your Pager:**

You can set up your cell phone so that all pages are sent to both your pager and your cell phone. There are several considerations:

1) You can turn off your pager, and just carry your cell phone.

2) There have been occasional missed pages when on call, due to poor pager reception in Chapel Hill. If pages go to both devices, you are less likely to miss them.

3) If you drive outside of the Pager Service Area (for example, to another state), you can still get pages on your phone.

4) Note, however, that only pages placed through WebExchange will be forwarded, not pages that have been “direct dialed”, so you may still miss pages this way.

5) Depending on your carrier, cell phone reception in certain parts of the hospital and in certain parts of Chapel Hill is spotty. You may still want to carry your pager with you, at least until you determine if you get good cell reception.

To set this up (this is a permanent change, not a temporary thing you can turn on and off), send an email to Phil.Dunlap@unchealth.unc.edu or call 984-974-2354. Be sure to include your pager number, cell phone number, and the name of your cell phone carrier.

**Phone Numbers**

You will frequently be paged to a 5 digit number. You are required to enter a seven digit number now even at the hospital (but used to be able to use five digit number). Many people still give five digits for a return call number.

These correspond to the last 5 digits of the phone number (i.e. 61661 = 966-1661). When dialing from within the hospital, you need to dial 8 as long as the area code you’re calling from is the same as the area code you’re dialing. Otherwise, you will need to know the correct prefix and area code in order to dial the number:

● Extensions that start with 6 belong to the 966 prefix (919 area code), so dial 919-966-\*\*\*\*

● Extensions that start with 5 belong to the 215 prefix (984 area code), so dial 984-215-\*\*\*\*

● Extensions that start with 4 belong to the 974 prefix (984 area code), so dial 984-974-\*\*\*\*

**Calling patients anonymously:**

If you want to call a patient from your personal number, you can call the operator and ask them to connect you. It will appear on the patient's caller ID that someone is calling from UNC. It will not show your personal phone number. Alternatively, you can use Doximity Dialer or place the digits “\*67” before the number you dial to block your number. Some patients do not answer blocked numbers.

**Attending phone numbers:**

If you are on call and unable to reach the needed attending via page, there is a list of cell/home phone numbers for \*most\* attendings on Med Hub. We would **strongly recommend** downloading a copy of this to keep on your home computer and/or phone, so that you can access it overnight. This is also available on MedHub.

# **II.** **Information Technology**

1. **Email:**

Your email is accessed by going to <http://mail.unch.unc.edu>.

Most email addresses end in “@unchealth.unc.edu”

Finding Email Addresses:

● When you log into your email, you can search for people to send emails to using the directory. However, this directory is ONLY for unchealth.unc.edu email address. It does not list med.unc.edu addresses, which many faculty members use. What is worse, some faculty members will be incorrectly listed here (such as those that used to be fellows at UNC), and they may not get your email if you send it to them using this feature. Others are listed here correctly, and will get it. Be warned.

● You can search for many med.unc.edu email addresses by going to [http://my.unc.edu](http://my.unc.edu/) and clicking on directories or going to unc.edu and entering the person’s name in the search box (and click the “directory” radio button).

Sending emails to the group lists:

● Send an email to Terri King and ask her to forward it to the list of your choice (fellows cannot send directly to the group lists)

Setting up email from your SmartPhone:

● Server address: webmail.unch.unc.edu

● User name: your email/epic login (not your onyen)

● Password: your email password

● Server: caoma.unch.unc.edu

● Domain: unch.unc.edu

1. **WebExchange (will soon be My UNC Directory):**

From inside the hospital, this can be reached via a link on most computers (or at <http://directory.unch.unc.edu/webdirectory/>). From home, you can only reach WebExchange through the Citrix Receiver (go to “intranet” from the Citrix main page).

This is a useful tool for:

1) Text paging

2) Looking up phone numbers of people or places at UNC without dealing with the operator (ex type in Blood Bank, or Radiology)

3) Determining who is on call for various departments. In the box on the bottom, you can type in Hematology and our monthly call schedule appears. This is created by the operators. If you are getting a lot of wrong pages, take a look at this page to see if you are listed incorrectly.

1. **EPIC:**

To access from a non-hospital computer, you must go through the Citrix gateway. This includes an inbox that is used for physicians, nurse navigators, and other healthcare providers to communicate regarding patient care. You will end up sending a lot of staff messages regarding patients while on call. Be sure to stay on top of your own inbox messages and don’t let them build up!

**D.** **CITRIX Gateway:**

This is a server that can be accessed from anywhere. [https://myapps.unch.unc.edu](https://myapps.unch.unc.edu/Citrix/MyAppsWeb/). (Most computers in the hospital have a link titled CSG that will take you here. Sometimes, just typing CSG into the address bar in a computer at the hospital will take you here). You will need to install Citrix on your home computer in order to have access to EPIC from home.

Used to access:

1) Microsoft Office and PowerPoint

2) Storage Space. This is on your S: drive, which you can access via Citrix.

3) Webexchange. There is a link to the webexchange on the Citrix metaframe under IE Shortcuts.

4) Epic

You should have been set up for this, but if you have not, download this form and give it to Terri King to fax to the SARF office. <http://intranet.unchealthcare.org/forms/intranet_forms/sarf/view?searchterm=sarf>

**E.** **Haiku (Android) / Canto (iPhone) Apps for EPIC**

These apps enable you to access EPIC from your Smartphone. Download the App from your PlayStore or Apple Store. Access the Canto application in settings.

- Set the HTTPS option to “ON”.

- Set the Server option to “epsoap.unch.unc.edu”

- Set the Path option to “HaikuProxies”

- Login into the Canto app with your EPIC login and password

**F.** **PACS:**

This is the software for radiology studies. From Epic, in radiology tab you can direct click into PACS to view images.

**G.** **Computers in our Office:**

These are School of Medicine computers, not hospital computers. Login is with an onyen account, not your EPIC username and password.

1. Therefore USB/Flash drives will work.

2. Also you can access the school of medicine shared drives (S: drive most importantly), where program materials are sometimes saved.

3. These computers are very slow so recommend bringing your laptop for most use in the office.

If you are having problems, email domis@med.unc.edu.

Here is a helpful link with some information about the school of medicine network, including how to set up Remote Desktop:<http://medicine.med.unc.edu/dom-is-support/faq>

**H.** **Library:**

There are multiple ways to access library content from home:

1. Sign on to the CITRIX Metaframe, and open internet explorer here. That way, you instantly have access to all library content as if you were surfing the web from inside the hospital.

2. Go to<http://www.hsl.unc.edu/>, follow the link to pubmed and when you click on the article in the UNC system (only if you are accessing from home) it will prompt you for your sign on. Use your Onyen (see below) to sign in.

3. Set up remote desktop (see section on "Computers in our Office" above) with your office computer, and use this to surf the internet as if you were in your office. Our office computers are slow, making this option difficult.

**I.** **Personal Laptops:**

You can set up your personal laptop to access the network at work.

1. Accessing the School of Medicine Network (ie wireless internet in the POB)

-- Register your device (smartphone or laptop) at ONYEN website (below)

--email domis@med.unc.edu

--Click UNC-setup and follow instructions

2. Accessing the Hospital Network (ie wireless internet in the Cancer Hospital)

--You can access the public wifi network in the hospital to get on the internet.

--You can also gain access to the Eduroam network which is a private hospital network.

**J.** **Help Desk:**

Hospital Help Desk can assist with hospital computer issues and can help reset passwords for EPIC, etc.: 984-974-4357

School of Medicine Help Desk can assist with computer issues pertaining to your office. 919-966-1325 or domis@med.unc.edu.

**K.** **ONYEN:** [**https://onyen.unc.edu**](https://onyen.unc.edu)

UNC uses the ONYEN system for its online identification of employees and students. Use this website to manage your ID and password (most commonly used to log in to PUBMED for access to the UNC library online journals for presentations etc). This is also where you go to register and gain access for your personal devices to the UNC wireless network.

**L.** **Printing at the POB**

Open My Computer

Type \\SOMPRINT2

Scroll down to the printers labeled DOM\_hemonc…..and find a printer labeled with a room number near you! Email domis@med.unc.edu if you can’t get them to work.

# **III.** **First Year Expectations**

Inpatient Rotations - Generally, 6-7 inpatient months (depending on the year and your boarding status).

Continuity Clinic - One ½ day of clinic per week. In the first year, this is typically divided into 6-month blocks of GI and breast. You are expected to attend clinic unless on vacation (ie. even on inpatient services).

Conference presentations

● Monday Morbidity & Mortality Conference (2 PowerPoint presentations, one 60 mins, one 30 mins)

M&M/Quality Improvement Project - Each first year fellow will perform a quality improvement project as part of their M&M presentation. You will be assigned a coach and work together with other fellows in teams. Cases will generally be assigned to you. You will (a) present case history/details, (b) identify the problem, (c) perform a systems/root cause analysis, (d) speak with stakeholders regarding the case, (e) propose solutions to the problem, (f) present initial case at monthly Heme-Onc division M&M conference and then present follow-up later in the year.

● Friday Heme Conference, (~30-60 min PowerPoint presentations), done when you are the Coag Consult fellow and the week following Coag consults.

Procedure Log - In MedHub, requires supervisor sign off

Milestones - The ACGME has implemented a new “milestone” program. Details of this are unfolding, but essentially your progress will be reviewed periodically to ensure you are meeting appropriate “milestones” for a heme-onc fellow.

In-Service Examinations - ASH and ASCO offer in-training examinations (generally March and February). Both are mandatory unless single boarding. The Chief Fellows will arrange service coverage in advance of the examination. These scores are meant for your own improvement and are not meant to be used as a performance marker by the program. In your second and third years, if you do not meet a certain standard, then additional reading may be assigned to augment board preparation.

Fellowship Plan for Years 2 and 3. You will be tasked to decide in your first year whether you want to pursue a “research” or “clinical” track. This occurs in January of your first year. You will be getting a lot of information about the various research opportunities, and you should talk to your mentors and PD early about this. At the end of your first year, you will submit an “Individual Development Plan” with the assistance of your mentors. An outline for this will be provided.

QOPI - Spring each year, we participate in the ASCO quality initiative (QOPI). Dr. Collichio is in charge and will provide you with details as the time nears. It entails reviewing a few charts and entering the associated data into ASCO’s database.

Semi-Annual Reviews: With Dr. Ma, review accomplishments, goals, exam scores and evaluations. Terri will coordinate these.

Chemo Competency: With Dr. Collichio, you will complete at least 10 chemotherapy templates to consider all aspects of treatment (antiemetics, fluids, etc.)

Mentoring: You will be assigned a faculty mentor (this can be changed as your interests develop) to help guide your decisions about pathways.

**IV.** **Schedule**

The fellowship is structured such that a majority (12 of 18 required months for dual boarding) of clinical duty is completed by the end of the first year. The monthly schedule will be distributed by the chief fellows for the entire year (July-July) but there may be updates as needed throughout the year as circumstances dictate. A day-to-day schedule of overnight call is distributed separately and available in a shared Google Calendar.

First-year rotations:

Double-boarders: ~6 inpatient months to include BMT, Malignant Heme (formerly Med E), Oncology Consults (formerly Med L), Benign Heme Consults (aka “Coag Consults”). Vacation (4 weeks total). Remaining ~6 months are outpatient: Onc Clinic, Heme Clinic, Electives, and Research/QI.

Med-Onc boarding only: ~6 inpatient months (same as above without the Coag Consults). Vacation (4 weeks total). Remaining ~6 months are outpatient: Onc Clinic, Electives, and Research/QI.

Hematology boarding only: ~6 inpatient months (no Oncology consults). Vacation (4 weeks total). Remaining 6 months are outpatient: Benign and malignant hematology clinics, elections, research, QI, etc.

**Inpatient Teams:**

**Med E - Resident-Run Malignant Hematology Service (formerly E1)**

**Med O - Resident-Run Solid Oncology Service (formerly E2)**

**Med Q - APP Malignant Hematology Service, Attending for which also covers Malignant Hem Consults (formerly E3)**

**Med T - BMT**

**Call Schedule Template:**

The bulk of call is covered by the first-year fellows as they are on the inpatient clinical services and can provide some continuity of care.

1. Weekdays: Fellows can feel free to swap weeknights as needed. Please make the changes on Google Calendar being careful as this is a shared calendar

2. Weekends: Two fellows will cover two services each on the weekends. Typically, you will round with your **primary service at 8:30 am** (either BMT or Med Q) then round with your **consult service at 11:00 am** (Onc consults or Coags). The attendings should be aware of this, but please remind them. Generally, consults called in after 2 pm can be done the next day unless they are urgent. These are general guidelines and you should feel free to see patients with emergencies first.

a) BMT/Onc consult fellow: *The BMT fellow in any given month must work 2 of the weekends of the month while on BMT for continuity of care. This is a mandate from the BMT attendings.* The specific weekends of that month can be traded between fellows (keeping duty hours in mind). The default assignment for coverage is 2 weekends by the BMT fellow, 2 by the Onc consult fellow. The BMT/Onc consult fellow first rounds with BMT (seeing your patients first before the APPs) at 8:30 am, then moves on to round on the Onc Consults patients at 11 am. The BMT/Onc consult fellow is also back up for the infusion center (though is staffed by APPs as well). Be sure to touch base with the Onc consult attending early as **chemo orders on weekends must be in by noon.**

b) Malignant heme/Coag fellow: These weekends can be freely traded among the fellows. The malignant heme/coag fellow is responsible for covering the Coag Consult Service and the Med Q overflow/Malignant Heme Consult Services. You will begin by rounding on any Malignant Heme consult patients and Med Q patients, then Coag patients at 11 am. You should contact the Med Q team the day prior to the weekend to know which patients you will be covering for Q.

c) Outpatient Call Pager:

Friday 5 pm – Saturday 8 am: Fellow covering BMT / Onc Consults

Saturday 8 am – Saturday 4 pm: 3rd fellow (taking call from home)

Saturday 4 pm – Sunday 8 am: Fellow covering Coags / Malignant Hem

Sunday 8 am – Sunday 4 pm: 3rd fellow (taking call from home)

Sunday 4 pm – Sunday 5 pm: Fellow covering BMT / Onc Consults (this person does not need to sign into the pager, they will be signed in by the 3rd fellow, and the sunday night fellow will take the pager an hour later)

Sunday 5 pm – Monday 8 am: Fellow on-call

# **V.** **Rotations**

## **A.** **Overview of Inpatient Rotations**

Please bear in mind that it is expected that you attend Monday’s Division conference and the 7:30 am lecture series. Time is precious on these rotations but do your best to get an education as well. If you are on Malignant Hem consults , you MUST attend Parker conference (Monday at 4pm).

New consult notes should be done the same day as the consult unless it is a very late consult and the team is comfortable with receiving recommendations the next day. Verbal communication is paramount and a brief note should document recommendations. All consults must be discussed with your attending. There are standard note templates that will be shared with you that encompass all that is needed for billing.

On Malignant Hem, the number one priority is getting your procedures done. 3 PM is the cutoff for marrows (which means procedures after 2 PM creates annoyed techs).

**i. Benign Hematology Consults (also known as “Coags”)**

**Which Calls Do I Take?**

The system is confusing, so frequently housestaff will call you for all Hematology and Oncology consults.

● You are responsible for all benign hematology consults (cytopenias, bleeding, clotting, hemophilia, Sickle Cell)

● You are responsible for cases where a hematologic malignancy is being worked up, but not yet diagnosed, but this can be discussed with the Malignant Heme Fellow and Attending.

● If it is a consult for a *known* malignancy or there is concern for acute leukemia (e.g. biopsy proven or known history), you should ask them to page either the Onc Consult or Malignant hem fellow.

● If the ER calls about admission of a benign heme patient, they should be admitted to the Hospitalist (or gen med teaching) service, and we will consult (and sometimes see them in the ER if needed).

● For outside transfers of benign hematology cases (ie: TTP or acquired hemophilia), have the hospitalist or ER speak with the OSH and accept the patient. However, you should also get the story as many of these cases will need an urgent consult when they arrive, and may even benefit from some guidance on management.

**Responsibilities:**

The hematology attendings do not expect you to know the answers to many of these questions. ***They want to be called and to be involved***. Even if you know the answer, it is generally a good policy to FYI the attendings so that they can back you up if anything happens. If you get a new consult overnight, you must discuss with the attending before giving recommendations and they do not mind being called overnight.

**When you get a call:**

1. Collect Information: Patient name, Location, Team/Attending, Contact Person, Reason for Consult

2. If you think you may need to review the smear, ask the caller to order “MD Smear”. The core lab will prepare a smear, and as a team you can go to the core lab and take a look.

3. Assess the urgency of the consult.

● Nonurgent consults can be assigned to a student or resident, if one is available. You can review the notes and labs in the computer, and talk with the resident about the case prior to rounds if you have time.

● Urgent consults generally need an answer right away, and can't wait for afternoon rounds. (Examples: Do we need to exchange transfuse this patient with acute chest? Do we need to give factor to this patient with hemophilia? Does this patient have TTP?). These you should see yourself (or perhaps go see with a resident or student, so they can write the note), and then call the attending about prior to rounds

● As fellows, we do not accept curbside consults. Either the caller can request a full consult or you can tell them you will call them back during rounds to discuss with the attending. You can discuss the content of your “curbside” note with the on-service attending.

**Help on Consults:**

For the entirety of the month, you will have a “second fellow” on service with you. Senior Fellows will function in a mentorship role. Senior Fellows will be expected to see ~1-2 consults if you are busy, stay for rounds, cover the pager while you are in clinic, and provide insight into navigating the service.

You may or may not have students/residents on service with you (log on to Amion to check).

● On their first day, have them give you all of the dates that they will be available. Frequently they are in clinic, off on interviews, etc.

● Residents can write and sign notes, forwarded to the attending.

● You can co-sign student notes, but you must attest that you performed a physical exam and agree with all the documentation. Generally, it is best to heavily revise any student note prior to signing.

**Notes:**

● Initial consult notes are created in EPIC. Once your plan has been finalized on rounds, you can "Sign and route" it to the attending.

● Follow-up notes are created in EPIC. They can be very short.

● Follow-up notes do not have to be written every day. How frequently to write a note on a patient varies case by case. In general, if you are making a change to your management plan, leave a note. If the attending rounds on the patient, leave a note. It is also good form to have a note on the chart Thursday or Friday before going into a weekend, to avoid the team calling the covering fellow on the weekend.

● It is essential to verbally communicate your recommendations to the primary team, particularly if you will not have time to sign the note until later in the day.

● Be sure to indicate on the bottom of the note whether you are planning to continue following the patient or are signing off.

* When you sign off, you must VERBALLY communicate this with the primary team.

**Rounds:**

● Rounds generally start in the early afternoon (1:30pm). Page the attending in the morning of your first day to find out when they want to meet.

● Rounds this past year were in a conference room in POB

* The work room for benign hematology is on 4 Oncology Side A labeled “consult A.”

**Friday Conference:**

● There is a benign hematology conference every Friday at 1pm in the big conference room on the ground floor of the cancer hospital (Sanofi-Aventis room). Most of the benign hematology faculty come, as well as faculty from other departments including hematopathology and some retired faculty

● **You are responsible for presenting during this conference. The conference schedule will be on the GoogleCalendar. If you have questions about when you present, contact your chiefs.**

● Generally, 1-2 interesting cases are presented in PowerPoint format, followed by a discussion of a relevant topic that you plan with the service attending. Your discussion portion for each case should be about 7-10 minutes and include information about one aspect of the case (e.g. presentation, or initial management, etc). If you are discussing a very specific topic (e.g. vincristine use in TTP), you can include data and more detail about that specific aspect. **This is not intended to be a full literature search or entire broad overview. This should be aimed at your co-fellows and attendings.**

● In general:

* First Friday of the month: presentation given by the fellow on service during the previous month
* Second Friday: Usually (not always) is a Journal Club given by an upper level fellow. Use this opportunity to prepare your cases for the following week!
* Third, fourth (and sometimes fifth) Friday: the fellow on service that month.
* Your medical students or residents can also help you by presenting either a case or an interesting article. This is always nice, as it relieves some of the pressure on you. Please be sure to let the attending know that the student/resident will be presenting.

● Speak with your attending EARLY in the week to figure out a case to present. The earlier you can start preparing, the easier life will be.

● If the month has 5 Fridays AND there is a fellow in benign hematology clinic that month, then the fellow on the clinic rotation will present the 5th Friday.

● See the [Conferences](http://fellowsguide.wikispaces.com/Conferences) section for more details.

**Bone Marrow Biopsies**

You will occasionally need to perform bone marrow biopsies as evaluation for pancytopenia, etc. You must (1) place the patient on the Heme-Onc procedures list, (2) contact the hematopathology techs at 984-974-8322 to let them know you are planning a marrow, (3) alert the HUC on the unit your patient is located that you need a bone marrow biopsy kit, bone marrow biopsy needle (specify 4” or 6”), (4) order/discuss with the primary team the premedications (including lidocaine) that you will use and possibly order yourself.

**Patients Calling From Home:**

During the day, patients with questions should be calling the clinic and selecting the option for the nurse triage line. This does not always happen. Sometimes patients reach the operator who pages you in error. Please be polite (even though it’s annoying) and give them the clinic number.

**General Advice:**

Hemophilia nurses (Brenda Nielsen, Elise Coventry and Leunora Ward) know all of the patients, and can be reached at 919-966-4736. They know what treatments patients get at home and can help arrange follow-up. You should keep them in the loop if you have hemophilia patients pending discharge. See outpatient benign hematology clinic block in this guide for specific contact information.

**Walk-In-DVT Clinic:**

UNC has a Walk-In DVT clinic Monday-Friday, run by the benign heme APP, Cassie Frank. You may get calls from outpatient providers or the ED asking how to get someone an appointment in this clinic. The algorithms for which patients are appropriate for the walk-in DVT clinic are uploaded to MedHub. You can instruct that provider (NOT YOU) to do the following:

1. EPIC Referral: Ref 32 - AMB REFERRAL TO HEMATOLOGY. Location: UNC BENIGN HEMATOLOGY CLINIC FARRINGTON ROAD CHAPEL HILL

· Input “Walk In DVT Clinic” in Comments section of referral

2. Call 984-974-2695 to schedule appt

3. Ensure patient has a prescription for anticoagulation

### **ii.** **Bone Marrow Transplant**

**Daily Schedule:**

Rounds generally start between 8-8:30AM (start time is attending specific).

The transplant weekly meeting occurs on Mondays at 2:25PM in the Sanofi Conference room. You are responsible for giving a brief overview of each inpatient and their current issues. Then the group will discuss upcoming admissions and other patients.

You will cover the BMT pager from 7 am to 7 pm. Page the hospitalist APP covering (who covers BMT and Med Q at night), or call the hospitalist team room in the morning to get signout for overnight events. You are expected to stay in the hospital until 7 pm (the APPs also are expected to stay until 6 pm), except on your “short day.” At 7pm, you sign out to the covering hospitalist for the evening. They usually meet in the Med Q work-room on 4 Onc (side C behind nurses station).

Sometime during the week following the weekend that you are on call, you will have one full day off. This is typically set for Wednesday, but can be moved to either Monday or Friday, depending on your clinic schedule. If you need to move your day off, please email the APPs early in the rotation to discuss. Following the weekend in which you were off, you will have one “short” day, in which you can leave at 3 pm if all of your work is complete. You will sign out to the APP at 3 pm. The APPs will send out a schedule fo when you are off

**Responsibilities:**

The BMT fellow shares responsibility with the physician extenders for all adult inpatient BMT patients and sees all of the BMT consults (mostly BMT patients in the ICU). Admissions are typically scheduled bone marrow transplants (both allos and autos), CAR-T, or admissions for acutely ill patients from outpatient BMT. You are responsible for writing daily notes on the patients and entering orders/calling consults. You should pre-round on your patients prior to rounds, but this is more flexible on days with morning didactic sessions. On weekends, you and the one physician extender each share half the patient load. The attending should know that you round on your patients first on the weekends, but please remind them if this is not happening.

**Admissions:**

**Scheduled admissions**: You will hear about scheduled admissions from the RNs, attending, and at the Monday Conference. Your H&P should summarize their treatment course and pre-BMT evaluation. You will also have access to the "shadow chart" from the transplant coordinators which has data about their conditioning regimen, donor etc as well as a pre-admission clinic note (which can be copied and edited). The transplant coordinator usually has a succinct “cheat sheet” summarizing all of the pre-transplant workup such as EF and CMV status. You will need this information for your H&Ps.

**Acute admissions:** Acute admissions will usually be the result of the patient or family calling the BMT unit during the day or after hours with fever or other problems. They will also often present to ED. You will get paged by the medical admitting officer (MAO) to admit the patient if in the ED. For outpatients, call MAO and request a bed. For uncomplicated issues, have the patient directly admitted to the hospital or seen in infusion and tell them to come directly to the BMT Unit (meaning that they might need cultures, CXR, etc). If you think they will need imaging or possibly will need the ICU, then have them go to the ER. If they are going to the ER, then you can look them up on the Epic and call the ER for an update on their status once they get there. If the patient is going to the ICU, then you will act as a consultant, primarily managing immunosuppression.

For acute patients arriving after 5pm, the admission will be handled by you (the BMT fellow). Admission after 7 pm will go to the overnight hospitalist. You should give this person a heads-up if you know someone will be arriving on their shift. You should staff these patients with an attending and have a plan in place if possible.

**Orders:**  A pharmacist rounds with the team in the mornings and helps with orders for medications. You and the extenders are responsible for all other orders. Admission orders are found in Epic as a BMT Adult order set. Your best source of updated info on admission orders is the APPs.

**Discharges:** All patients on discharge need a d/c summary that either you or the extenders will complete (depending on who is following the patient). This is a templated note that is generally copied and pasted from the final progress note with a few additional details. You can also use this as your progress note for the day (you will see a section for physical exam, discharge day services). Alternately, it may be useful to keep an ongoing “hospital course” in the Discharge section of Epic. This can be shared among other providers and is a good way to keep track of events for patients with prolonged hospital courses. You are also responsible for arranging hospital follow-up appointments.

**Handoff:** Make sure you give appropriate handoff to the next fellow when you are changing inpatient rotations.

### **iii.** **Malignant Hematology Consults (formerly Med E)**

### **Weekday Responsibilities:**

You are responsible for consults on patients with *known* heme malignancies, including those with a known history or with a new biopsy proven diagnosis. If a patient with an established malignant hematology diagnosis (i.e. multiple myeloma, CLL, lymphoma, etc) is admitted or transferred to a non-oncology (not E or Q), whether that be on the floor or the ICU, these patients should be seen by you and Med Q malignant heme attending.

If the consult fellow is called with a patient that has no established diagnosis, but has signs/symptoms concerning for a new malignant heme diagnosis, such as pancytopenia or diffuse lymphadenopathy, the coag consult team should assist in working up that patient. In some instances, this encounter will result in no further inpatient care and an appropriate outpatient follow-up can be made. However, the patient may require transfer to Med E for inpatient therapy. The decision for outpatient follow-up should come from the malignant heme attending

Your primary responsibility will be to manage the consults. You will spend most of the morning seeing consults and will typically round with the consult attending (Q attending) after Q rounds.

You will also oversee the workup and management of new diagnosis patients or patients with a new presentation of relapse (primarily seen on MED E) as time allows. These responsibilities may include:

a. Guiding residents for workup/initial management

b. Reviewing pathology

c. Determining therapy

d. With sufficient experience, you may function in a subattending role on these individual patients on rounds.

Remind the attending to see these patients first on rounds, if possible, to free up your time to focus on consults. When the consult service is busy, this part of the rotation often does not occur.

The patient list is maintained in EPIC by the fellow.

**Procedures:** Procedures will be done according to the attached flowsheet (see below). You will be primarily responsible for doing procedures on all the consult patients and all Med E patients. You will work with the Med E attending and residents to coordinate E procedures (placing orders, ensuring safety, appropriateness, clinical trials etc.). In order to facilitate this, you will discuss with the E team during huddle in the morning any procedures that need to be completed. It is critical that you discuss with the Med Q APPs which procedures need to be completed that day and who will be doing them.

a. **Details:** Be sure to place the patient on the Heme-Onc procedure list and notify the techs in hemepath (984-8322) when you have a bone marrow biopsy planned. They like to know a day ahead of time, if known, or as early as possible. Remember, all bone marrow biopsies must be done before 3:00pm unless you have pre-arranged Hemepath staying late for an urgent/emergent situation.

**Procedure Flowsheet:**

Fellows will be responsible for all procedures (LPs with IT chemo and bone marrow biopsies) on the consults (up to max)

* Procedures scheduled for the afternoon of the fellow’s clinic will go to the pool or Hematology/Oncology Fellow (float)
* APPs will be responsible for all procedures on the patients on Med Q they are covering (up to max)
* All procedures that are not covered by the above will go into the general procedure pool which will be covered by the fellow and APPs
* Med E procedures not able to be done by Med M will go the procedure pool – overseen by fellow communication with residents/attending on E
* There will be a soft cap of procedures set at 4 per day total (including E, Q, and consults)
* To avoid going over 4 procedures, non-urgent procedures may be delayed if clinically reasonable
* In rare circumstances where there are more absolutely necessary procedures than the soft cap, this can go to 5 (hard cap). In such instances
* The Q fellow can take another procedure, and
* If necessary, the team can reach out to:
  + Hematology/Oncology Fellow
  + BMT fellow
  + Other APPs who have volunteered to help
* **The max number of procedures providers should do per day is 2** (APPs and fellows included)

**Other responsibilities:**

The fellow will coordinate transfers from the consult service to the primary services (E and Q) and be available to put in orders and/or write transfer notes on occasion.

Write chemotherapy orders in EPIC if necessary. These should be done by the primary oncologist, but in newly diagnosed patients this is your responsibility, and a good learning opportunity. The majority of frequently used chemotherapy regimens have been put into EPIC templates. However, they will need to be reviewed as there are frequently things that need to be modified (labs being the most common). You will also be asked to edit/re-write innumerable chemo orders. These are generally minor things that are unclear or slightly changed. The nurses/pharmacists will let you know what needs clarifying. The pharmacists will be your go to resource for dealing with chemo order issues.

a. There are dot phrases that have been created by Laura Blanchard (head inpatient APP) for most chemo regimens that are given in the hospital. These can be found under her name and .CHEMO\*\*\*. It would be beneficial to use these.

Patient/Family Talks. You are frequently the one leading family meetings, breaking bad news, discussing future treatment options.

Coordinating with Outpatient Oncologists (UNC and other). You are generally responsible for talking with patient's primary oncologists, whether they are at UNC or elsewhere, to update them and get advice about treatment decisions. It is extremely important that the hospital course and ongoing plan of care is discussed with the outpatient Oncologists.

Teaching. When you can. This is a busy rotation. The attending is generally expected to provide formal didactics.

Transitions of care: You are responsible for ensuring that patients with newly diagnosed hematologic malignancies seen on the consult service have a safe discharge plan in place. A UNC physician extender should see every new malignant hematology patient within 72 hours of discharge. Reach out to **Alma Ngugi** (E inpatient navigator) to arrange for follow-up for consult patients.

**Parker Conference:**

This is every Monday at 4pm in the main conference room on the ground floor of the cancer hospital. It is an opportunity for people to present heme malignancy cases for discussion and group consensus. You are **expected** to be there and to present new cases that have been admitted to the hospital. Occasionally, the attending will ask you to present other inpatient cases there as well, so clarify with them ahead of time which cases you should present. Be sure to notify hemepath prior to any cases you will present, so they can bring slides to review.

**Leukemia Meeting:**

This is held on Thursdays at 4:00 pm in the 2nd floor Cancer Hospital conference room. Fellows are not expected to attend unless requested by the attending.

**Team Structure of Medicine E:**

There are two oncology teaching services which are theoretically divided as Heme Malignancy (Med E1/E) and Solid Tumor (Med E2/O) and an APP service (Med E3/Q). The MAO (medical admitting officer) will help place patients on the appropriate teams. You are not responsible for placing patients on teams, though can discuss with the MAO where it would be appropriate to place them if necessary.

### **iv.** **Oncology Consults (formerly Med L)**

**Weekday Responsibilities:**

Touch base with the Medical Admitting Officer (MAO) and/or 4 ONC charge nurse daily to anticipate any scheduled chemo admissions; these will usually go to Med O but may occasionally go to a hospitalist service (requiring an oncology consult) if O is full. Scheduled admits can be found in Epic under the Epic button->Unit Manager->Direct admits to 4onc. There should be a phone note by the nurse navigator regarding the chemotherapy. Inform the charge nurse if the admissions are going to a hospitalist (with onc consult), resident (Med E or O) service or extender service (Q). This is usually determined by the MAO based on available team spots. Make sure you alert the teams if they have admissions coming their way. Placement of the inpatient “okay to treat” order is a key step in facilitating these admissions without delays - make every effort to see patients and place these orders as quickly as able.

*Any issues with chemotherapy on the Med O service are generally handled by the attending, but you should be willing and available to help if needed.*

You will round with your oncology consult attending and the pharmacist on patients on the consult list. These patients will be both consults from other services and routine chemotherapy patients who are on the Hospitalist service. **Chemo patients are required to have a *daily* follow-up inpatient consult note by the fellow**. Other consult notes are on an as-needed basis (standard for consultation services).

During the day, you take new Oncology consults (both new cancer workups and scheduled admissions for chemotherapy). Typically, you will consult on scheduled chemo admits if they go to a team other than the O service. You will need to write a consult on all patients being admitted to the hospitalist service and ensure their hospital and discharge plan is in place.

Triage responsibility: You are typically not involved if the residents (reaching their cap for patients) or the clinic want to admit a patient to hospitalist service. They should contact these teams and the medicine admitting officer (MAO) directly.

Write or clarify chemotherapy orders if necessary. Note that for the routine admissions, chemotherapy orders should be written and signed in Epic by the outpatient attending. You should double check that chemo orders are in fact present on the day the patient is to be admitted; if they are not, contact the attending or their respective Nurse Navigator.

Teaching: There are teaching opportunities on Med O. If interested, please discuss with Dr Collichio.

The patient list is maintained in EPIC by the fellow.

**Procedures:**

*You are responsible for performing all procedures on the patients on the consult service and solid tumor patients on the E service as needed.* This will mostly be intrathecal chemo but may include the occasional bone marrow biopsy. Intrathecal chemotherapy should be attempted at the bedside. If intrathecal cannot be performed at the bedside or if the patient has needed IR previously for their procedures, then this can be performed in IR but you are still responsible for helping to coordinate this process. Make sure you alert chemo pharmacy when/where the intrathecal chemotherapy is planned and place the “chemo clarification” order.

As of April 2021, Med M (procedure team) has started performing intrathecal chemo. However, you will still need to contact the procedure team and help with logistics if needed.

**Team Structure:**

This is a streamlined team of Fellow, Attending (different than the inpatient Solid Tumor Med O attending who runs that service with residents only), and pharmacist. You coordinate closely with the Hospitalist services.

**Solid Tumor Consults:**

● You are responsible for solid tumor consults during the day.

● These should be staffed with the inpatient solid tumor attending. However, frequently the attending on service will not be an expert in the particular cancer that the patient has. You may need to discuss the patient with an appropriate attending to formulate a plan, but please do not do this until you have staffed the patient with the Med L attending. **Recommendations should not be shared with consulting teams, even if discussed with another subspecialty attending, until the attending has staffed the patient.**

* Occasionally, it will be appropriate to fully staff a patient with another subspecialty attending, such as neuro-oncology, sarcoma, or melanoma. However, the attending on service has the right of first refusal of these consults, and they should be informed of and comfortable with plans coordinated with another attending.

● These consults are rarely urgent, however, as a consult service we are obligated to help when asked. If you think a consult is inappropriate, let your attending know/decide.

● *Arranging outpatient follow up is a big part of the job on this service.* Discuss who will follow up pending pathology results with the primary team. Either create your own list or keep patients on the Med L list until follow-up has been arranged. Contact intake coordinators via InBasket to request appointments for new diagnosis. For patients with pre-existing cancer diagnosis, contact **Tia Jackson**. Make sure the primary team has placed an Ambulatory Referral to Heme/Onc before requesting the appointment.

### **v.** **Hematology/Oncology Fellow (formerly “Float Fellow”)**

This is a new rotation as of 2020 with the primary goal of offloading the three consult services. This rotation is divided into two week blocks several times per year. You are expected to be available from Monday-Friday 8AM-5PM as needed. You have weekends off unless you’re pulled to cover someone.

Responsibilities of the Hematology/Oncology Fellow:

* Provide help for the benign hematology, oncology, and malignant hematology consult services. You may help by taking consults and/or doing procedures.
* Cover the transfer center pager from 8AM-5PM M-F (see below)
* Cover consult service pagers while primary fellow is in their continuity clinic
* Serve as jeopardy fellow in case another fellow cannot report for work (24 hours a day for the two weeks you are on this service unless on call, the chiefs will be in touch should you need to step into another role)
* Take the place of a fellow who was on call and needs the morning off after a sleepless night

Each fellow can do this how they choose, but generally the Hematology/Oncology Fellow will get in touch with the consult fellows early in the day to make themselves available and plan their day. You should also touch base about when they have continuity clinics so you can cover their pagers. You will also sign into the transfer center pager at 8AM during the week. We also recommend touching base with them throughout the day and keeping tabs on how busy their lists are. The motto of this role is that “you should be as busy as the busiest service.” A general day consists of a procedure or two and a consult or two with transfer calls in between. You will have downtime to schedule meetings, study, etc as well.

**Transfer Center Calls: 984-974-4500**

You are responsible for accepting outside transfers during the day for malignant heme and oncology. (Benign heme transfers are accepted by the hospitalist.) Please notify the appropriate service after accepting a transfer. You do not accept BMT transfers; they go to the BMT service.

An outside doctor will call the transfer center to request transfer. The transfer center will then page you. When you call back, they will inform you that you are on a recorded line. (This is for legal reasons, so when someone shows up on the floor with a BP of 40/palp, they can go back to the tapes and find out if you asked what the vital signs were. So be careful about what you say). The transfer center will give you a quick sign out about the patient, and ask if they can connect you with the outside physician.

A few tips when talking to the transfer center, before the outside physician gets on the line:

1. Be sure to ask the patient’s name and date of birth, so you can start searching for them in Epic while waiting to speak with the doctor.

2. See if the transfer center knows the diagnosis, because sometimes they have the wrong person and need to call Gyn/Onc. It's better to find this out before they go to the trouble of connecting you to the physician.

3. Remember that you are accepting patients for both Solid Tumor and Heme malignancy (so be sure to sign out to the appropriate fellow and resident team).

4. If it is a classical heme patient (sickle cell, hemophilia, TTP, etc), ultimately the hospitalist service or ICU will be accepting the patient. Have the transfer center page the hospitalist/critical care fellow on call to talk to the outside doctor and accept the transfer. You should still talk to the outside physician and make sure the patient is being managed properly while awaiting transfer.

5. **Patients should be accepted to the same or higher level of care. We do have an algorithm in place to accept outside ED patients if deemed appropriate for a floor bed.** Patients in the step down or ICU need to come to the UNC step down or ICU and should be directed to the Med I (ICU) physician. Only patients admitted to a floor bed or in the ER should be transferred to 4-ONC. Most of the calls you will get are from patients in outside ERs.

Next, talk to the physician and get some details about the case. Keep in mind, we pretty much accept all transfers. Your main goal is to triage. What are their vital signs? Are they safe for a general bed? We have an “OPEN ACCESS” policy, which basically means that we will “expeditiously” get them a bed, but does not mean you have to accept every patient request. **An ER-to-ER transfer can be arranged if no 4 Onc beds are available.** If the patient needs a higher level of care (coming for a floor bed but getting sick), then ask to add in the MICU physician as well to accept.

After accepting the patient, write a brief phone note from what you have discussed with the outside doctor. There is a template in Epic to use when accepting a transfer (.HOSTRANSFERCENTERTRIAGE). This information is for the housestaff who will be doing all the work, so be nice and give them a plan.

You should **notify the resident team** of an anticipated transfer and what has been done, especially if acute leukemia. In addition, please notify your attending prior to accepting a patient (each attending has a different personality/preference, but in general it is always safer to call/page).

## **B.** **Outpatient Rotations Overview:**

Each double-boarding first year fellow completes 2 required outpatient rotations: Benign hematology and Outpatient Solid Tumor.

Helpful tips for the outpatient experiences:

1. Writing consultation notes (applies to both heme and onc):

▪ Always start your note/Dragon dictation with the following info:

▪ PCP or referring MD

▪ “Reason for consultation: This consultation is at the request of Dr. XXX for evaluation of YYY disease”

▪ **DO NOT say that the pt is referred for eval and management** - this is related to billing

▪ Ask your attending if you should call the referring MD with recommendations

▪ You can either dictate your note using Dragon or type your note. Attendings must close an outpatient encounter **within 3 days** of the visit, so notes must be done in a timely fashion.

▪ When you finish a note, forward to the appropriate attending using the “CC: Chart” function in Epic.

2. If you choose to type your notes for your continuity clinic, make a template or steal a template from the attending / previous fellow to increase your efficiency

3. When starting a new chemotherapy regimen, you must include consent for chemotherapy in the note. Describe the regimen, drugs, doses, interval, anticipated number of cycles, goal of therapy (curative vs palliative intent). Include a consent statement. Ex: “I discussed the above regimen with the patient, who understands that the risks include but are not limited to, X, Y and Z. The patient understands these risks and gives his/her consent to proceed with therapy.”

4. Many attendings have their own “Smartphrases” in Epic that you can use with common assessments or plans for their specific disease types.

### **i.** **Outpatient Benign Heme**

**Schedule: (In addition to your ½ day continuity clinic)**

Your specific schedule has been determined for you and will be emailed to you prior to your first day on the block. You will work with a variety of providers who see a variety of pathology including thrombosis, hemophilia, hemoglobinopathies, HHT.

**Wednesday**: **Hemophilia Clinic at Eastowne**. Staffed by Drs. Key and Ma. You will also work closely with the hemophilia nurses (Brenda, Leunora and Elise), so be sure to introduce yourself to them.

**Thursday: Benign Hematology at Eastowne**. (You are expected to attend the Thursday AM didactic prior to going to the clinic). The attendings will expect you to start with their 9AM patient. In the afternoon, Dr. Kasthuri has HHT Clinic. You will work with a multi-disciplinary team including a geneticist (Ofri Leitner) when seeing HHT patients and their families.

**Sickle Cell Clinic at Eastowne**. You will work with Jane Little (hematologist). Only adult patients come to this clinic.

**Friday: Bleeding clinic at UNC with Dr. Ma**. Currently, Dr. Ma is working out of the Hematology/Oncology workroom. You usually finish up in time for the 1pm Heme conference, and then you have the afternoon off. \*\*Note you will never have the labs back by the time you write your note, especially since Epic requires encounters to be closed within 3 working days. It is your responsibility to follow-up on the labs, and discuss the results with Dr Ma to make recommendations about management. She will add an addendum to the note once all of the labs are back.

Sample schedule:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Monday | Tuesday | Wednesday | Thursday | Friday |
| 8 am: HHT clinic with Dr. Kasthuri | 8:00 am general hematology | 8:00 am: Hemophilia Clinic at CPII w/ Drs Key & Ma | 9:00 Hematology clinic at CPII | 8:00 am: Dr Ma’s Hemostasis Clinic |
| 12:30 pm Division Conference |  |  |  | 1:00 pm Heme Conference |
| Heme Clinic w/ Dr Mooberry or Continuity Clinic | General hematology clinic or Continuity Clinic | Coag Lab or Continuity Clinic | HHT Clinic w Dr Kasthuri @ CPII | Study time or Continuity Clinic |

**Other helpful information**

1. You may be asked to present at benign heme conference if you see an interesting case.

2. Hemophilia Clinic: Use Dr Ma’s dot phrase: .ADMHEMOPHILIACOMPREHENSIVE

3. Bleeding clinic: Dr. Ma’s dot phrase: .ADMOUTPATIENTCONSULTBLEEDINGEVAL

4. Prescribing IV Iron preparations

● Pre-medications:

o Tylenol 650 mg PO

o Benadryl 50 mg PO

o Test dose 0.5 ml IV (for iron dextran)

o PRN medications for hypersensitivity reaction: Solumedrol 125 mg IV; Epinephrine 0.3 mL of 1:1000; call MD

● Iron Dextran (Infed)

o Advantage – 1 infusion restores Hgb and Iron deficit

o Disadvantage – Many hours, more infusion rxns

● Iron Gluconate (Ferrlecit)

o Advantage – Lower risk for infusion rxn

o Disadvantage – Require several infusions

● Converting Iron Dextran to Iron Gluconate

o Infed = 50 mg elemental iron/mL

o Ferrlecit = 250 mg elemental iron/IV dose

o Ex: Hgb 8, wt 70 kg = 42 mL Iron dextran x 50 mg/ml = 2100 mg elemental iron\* 1 dose/250 mg elemental iron = 9 doses Iron gluconate to replete

● There is a table in MicroMedex or on UpToDate for easily dosing Iron dextran by weight

**Working with Dr Moll and Dr. Mooberry in clinic re: thrombosis**

Note that they are more particular about both presentations and notes. Be sure to do a COMPLETE history and physical because Dr. Moll will ask you for all of the details. This should include a DETAILED FHx (number of siblings, each with bleeding/clotting hx outlined) and if on anti-coagulation a “warfarin hate factor” or a “DOAC hate factor.” On your physical exam, be as objective as possible, measure differences between circumferences in affected extremities. Please dictate your assessment as follows:

ASSESSMENT (example)

1. Venous thromboembolism:

1st episode of VTE, right leg proximal DVT, in 2-2002 (report available to us). Venous thromboembolic risk factors at that time: (a) abdominal surgery 3 weeks earlier, (b) heterozygous factor V Leiden, (c) lupus anticoagulant, (d) smoking, (e) positive family history of VTE (brother). Treated with warfarin for 6 months.; 2nd episode of VTE, spontaneous PE, in 10/2002 (report no available to us). Doppler ultrasound of legs at that time reportedly negative (no report available to us). Venous thromboembolic risk factors at that time: (a) heterozygous factor V Leiden, (b) lupus anticoagulant, (c) smoking, (d) positive family history of VTE (brother). Restarted on warfarin; Lupus anticoagulant: the patient has had repeatedly positive LA (2-2002 and 10-2002) and therefore has to be classified as having APLA syndrome. The risk of recurrence in patients with 2 APLA syndrome… Therefore recommend long-term warfarin. Patient should wear compression stockings…etc

**UNC Hemophilia Center Summary Sheet**

**Contacts**

Phone 984-974-2695 (to schedule appointments or reach staff). Our Adult Clinic meets every Wednesday at Eastowne.

Tracy Griles, Coordinator

Curtis Gray, Social Work, pager #123-4572, dial 966-4736

Brenda Nielsen, Nursing, pager #123-2366, dial 966-4736

Leunora Ward, Nursing pager #123-4574, dial 843-7971

Elise Coventry, Nursing, pager #216-3079, phone 919-966-4736

\*Send Epic messages for patient issues

**Admissions**

Normally, the hemophilia nurses will add pts to the Benign Hematology (Coag) list when patients are being admitted and page the team about the addition. Please notify the hemophilia nurses of overnight/weekend calls (via In-Basket) so they can follow-up with the patient by phone.

**Discharges**

We arrange home factor prescriptions as well as CVAD care supplies/nursing for our pts. The Home Infusion service makes arrangements for other infusion needs (antibiotics). All home infusion referrals generally require at least 24-48 hrs advance notice in order to ensure a timely discharge. FYI: A patient who is uninsured may need to stay inpatient to receive factor.

**Surgeries**

Same-day admissions: we will alert the covering Coag pharmacist of pre-op factor orders so they can place in EPIC prior to admission. The Coag team then sees the pt to manage post-op factor therapy. When patients are first-case in the OR, they are often admitted the day prior to surgery and the Coag team will need to write preop factor orders the day of admission.

**Outpatient Prescription Requests**

Hemophilia is a chronic illness, and our patients are seen regularly for disease management in our Comprehensive Clinic. We make every effort to minimize the need for “emergency” prescriptions (factor or pain medications). On occasion, you may be called for prescriptions over the weekend. If the patient can wait until we return on Monday, feel free to transfer them to our office, where they can leave us a message. If they truly need a prescription emergently, please encourage an ER visit and/or limit the number of doses prescribed to the amount required to treat the acute issue. If you are unsure about what to do, call the attending.

### **ii.** **Oncology Clinic Rotation**

**Schedule: (In addition to continuity clinics)**

**You will receive a personalized schedule prior to the start of your rotation with clinic assignments.** During this rotation you will gain exposure to immunotherapy, solid tumor malignancies, hematologic malignancies, and BMT. You will also have the opportunity to learn how to do procedures if you have not yet done so.

**Expectations:**

You are generally expected to see new patients in all of these clinics. Some will also have you see returns. Contact each attending prior to starting in their clinic to clarify expectations. Review the attending schedule the day before to determine what time their first patient is scheduled, as that is a good time to show up. Identify yourself to the attending and ask them if there are any interesting patients for the day, and they may go ahead and tell you who they want you to see. This can be helpful, because you can read about those patients when you have downtime.

Most days you are done by 4pm, which gives you some time to get caught up on notes from the day. It is highly recommended that you dictate your notes on this rotation. If you are typing notes between patients, you won’t get through a note before someone asks you to see another patient. But if you are dictating, they possibly won’t ask you to see another patient until you are done.

**To find an attending schedule in EPIC:**

1. Go to the Schedule tab (top left in EPIC)

2. In the “Dept” field, select the appropriate department (clinic) – listed below

a. UNCH SURGERY ONCOLOGY CHAPEL HILL

b. UNC ONCOLOGY MULTIDISCIPLINARY 2ND FLR CANCER HOSP

c. UNC HEMATOLOGY ONCOLOGY 2ND FLR CANCER HOSP

d. UNC ONCOLOGY INFUSION CHAPEL HILL

e. UNCH BMT CHAPEL HILL

3. Find the attending in the drop-down list below

You should attend scheduled didactics, division conference (Mondays) and hematology conference (Fridays) as usual, letting your attendings know that you need to be away from clinic during these times. The tumor board schedule is listed in the Conferences section of the official handbook. Make an effort to go to each tumor board at least once during your clinic month.

### **iii.** **Continuity Clinic**

**Overview:**

During your first year you will have one ½ day of continuity clinic per week. For 6 months, you will do GI, and for the other 6 months, you will do breast oncology. All clinics are in the afternoon but there can be different starting times so check the schedule and with your preceptor. During your coag consult month, you will be expected to attend this clinic **in the morning**. Please inform your attending in advance about your vacation plans, so they know when you won’t be there. This clinic is NOT optional. You will be expected to be there and to work your inpatient responsibilities around these clinics.

**Nurse Navigator**:

Each clinic has a nurse navigator. Patients who call in will get her/him first and they will find you for various things the patient needs. An updated nurse navigator list is available on MedHub.

**Infusion:** (984-974-8200)

i. Advanced orders (chemo, labs, transfusion) are placed through EPIC.

ii. If for some reason the electronic system is down, orders for chemo are faxed to 3-0777 which goes to the chemo RNs on the 3rd floor who then turn in the orders to pharmacy.

iii. Labs (not transfusion) and injections (Neulasta, Lupron, Octreotide) should be scheduled as an RN visit, NOT INFUSION TIME. You typically do not have to worry about this.

**Other Ancillary Staff**

**Pharmacist:** The chemo pharmacists give chemotherapy teaching to all first cycle chemotherapy patients in the Infusion area on the 3rd floor. This supplements your more generic consent process in the clinic.

**Social worker:** Mary Cromer is the clinic social worker and can help with hospice arrangements or issues with transportation. The SECU house is like a Ronald McDonald House for patients who need to stay overnight and is very inexpensive.

**Study Coordinators:** When enrolling new patients on study, you need to contact the appropriate coordinator (the attending will know who to call). They will arrange nearly everything for the study patients for you (incentive to enroll them!).

**Admission from clinic:** Sick patients being admitted from your clinic can often go to the Infusion Center while awaiting a bed. They can start initial evaluation (labs including blood cultures) and management (IVF, meds). Ask the nurse navigator to arrange this. You should talk to the APP in Infusion to give a signout about your pt. It is good form to quickly get a note with your assessment and plan into EPIC ASAP – at the very least you need to have a telephone note with the reason for admission and any instructions for the infusion and admitting teams.

**Scheduled Admissions:** Heme malignancy patients often require admissions for overnight chemotherapy. These patients are typically managed by MED E1 or Med Q/E3 services. If it’s a solid oncology patient, the patient will go to E2. Scheduled admission is arranged by the attendings or their nurse navigator.

## **C.** **Elective**

See the official handbook for a complete listing of electives and contacts. Once arranged with the contact, email Terri King so she will put a MedHub slot in for you (otherwise you won’t get credit). You must take two weeks of vacation during 2 of these months, leaving 1 month of elective time. In your first year, you may take a 2 week block of time to devote to planning your future research or QI project. Many of the deadlines for T32 grants are in February, so you may want to plan your “research elective” accordingly. A complete list of T32 grants available may be found in the handbook and online. You should plan ahead and schedule meetings several weeks in advance to be sure that faculty will have time to meet with you. **If you are interested in Heme Path, contact in advance as this rotation fills up quickly.**

# **VI.** **Conferences**

**Mondays**

A. Division conference @ 12:30pm

1. Morbidity & Mortality/Quality Improvement Project (generally 1st Monday of each month)

● Each first-year fellow will be **assigned two M&M conference**s - a one-hour presentation in the fall and a 30-minute follow-up presentation in the spring. The fellow can choose the case with the assistance of a Chief Fellow or Program Director in advance of their scheduled slot. Designated time to prepare and analyze the case and the associated Quality Improvement Project will be allotted (generally during the “Research/QI” two-week block.

B. BMT Census – 3 pm, Sanofi Aventis Conference room. REQUIRED for the BMT fellow.

C. Parker Conference – 4 pm, Sanofi Aventis Conference room. Malignant Hematology conference. REQUIRED for the Med E1 fellow.

**Tuesdays**

Didactics @ 7:30am - some of the attendings will send reading/questions prior to the lectures. Fellows are required to attend 75% of didactics averaged over 3 years.

**Thursdays**

Didactics @ 7:30am, same as above.

**Fridays**

A. Benign Heme Conference @ 1pm

● Friday Hematology Conference (two 25 minute presentations, PowerPoint). Talk to your attending to select cases.

● First Friday of the month: previous month Coag Consult fellow gives 1-2 case based presentations.

● Second Friday of the month: upper level fellow leads Journal Club.

● Last 2-3 Fridays of the month: Coag consult fellow gives 1 case-based presentation and then HemePath provides slide review/teaching

● REQUIRED for all fellows boarding in hematology

**Tumor Boards:**

Various solid tumor conferences occur during the week in the main conference room on the ground floor of the cancer hospital. When you are on your outpatient solid tumor month, you will be expected to attend these. You may need to go at other times if you have a patient that needs to be presented.

*\*\* During the pandemic, tumor board has been via zoom. If you are interested in attending, please ask one of the attendings to have you added to the listserv.*

GI: Monday 7:30am

Thoracic: Tuesdays 12:15pm

Breast: Wednesday 8am

Melanoma: Wednesday (2nd and 4th) 9am in pathology conference room

Liver: Wednesday (1st and 3rd) 12:30 pm

GU: Thursday 1:15pm

Head and Neck: Friday 7:30 AM

**Art of Oncology:**

The Art of Oncology Curriculum is designed to facilitate development of the necessary skills and virtues for fellows to care for patients well and to personally flourish in a career in medicine. Sessions will expose fellows to the art of caring for patients and provide the opportunity to reflect on the responsibility and privilege of our calling. These will be REQUIRED sessions during typical didactic times.

Foundational themes are as follows:

Finding Meaning: Oncology as Calling in Community

Mitigating Burnout: Cultivating Virtues of Resilience and Self-care

Death and Dying: Flourishing while caring for the suffering

Each session will begin with a prompt, often a first-person narrative, video, or essay, followed by open discussion. The goal will be to facilitate deep reflection and provide a framework to integrate skills and virtues which will serve to allow fellows to better care for patients and themselves.

# **VII.** **Call**

The dreaded call. The most important thing to remember is that you always have your attending as back-up, be it the attending on the wards, consults or BMT. ***DO NOT hesitate to call your attending. The attendings would prefer to be called than not if you are unsure about something.*** If you are thinking about calling, then you should call.

**A.** **Must Call Attending For These Things (even if it’s 3 AM)**

**Classical Hematology**

● Suspected TTP

● Hemophilia/vWD management

● Need for reversal w/ patient on anticoagulation, especially new oral anticoagulants

● Emergent IVC filter placement

● Thrombolytics in patient w/ DVT or PE

● Pre-op patient w/ known bleeding issues (keep in mind sometimes the patient will get taken to the OR the same day, so ask about time of planned surgery)

● Sickle Cell Disease - multiorgan failure, liver sequestration, stroke, acute chest syndrome, emergent surgery, or any service consulting to transfuse a sickle cell patient

● Outside MD calls about non-UNC patients *(this is technically a Carolina Consult).*

● Any other condition that you are unsure about in regards to management (better to call and avert issue for the next day)

**Malignant Hematology**

● All Acute Leukemia – you have to see the patient if you think they may need leukapheresis, may have APL and pt is in DIC, or are ill enough to be ICU level of care.

● Acute change in patient on floor requiring higher level of care

● Unexpected death of any patient

● Stopping chemotherapy prematurely or any suspected chemotherapy overdose

● Suspected cytarabine induced neurotoxicity

● Any issues that you are unsure of management including outside patient or MD call

**Solid Tumor**

● Suspected cord compression

● Acute change in patient on floor requiring higher level of care (this may be attending specific, but the majority would rather be called)

● Unexpected death of any patient

● Stopping chemotherapy prematurely or any suspected chemotherapy overdose

● Any issues that you are unsure of including management of outside patient or MD calls.

● Hypercalcemia with EKG changes

**BMT Must-Call List**

● Any acute change in patient on floor, especially if requiring higher level of care

● Death of any patient (especially if unexpected)

● Stopping chemotherapy prematurely or any chemotherapy overdose/toxicity

● Any issues that you are unsure of **including management of outside patients** or MD call.

**B.** **Duties and Guidelines**

The On-call fellow covers everything (except BMT inpatients - covered by APP on separate pager) at night. Outpatient phone calls from solid tumor, heme malignancy, and classical heme patients all come to you through the operator. You cover consults (ER and in-house), though you only need to come in for emergencies. If you are called to see a patient in-house emergently which you think is inappropriate, make sure you discuss the case with the attending, who will advise you appropriately. Inpatient BMT is covered by APPs, but you will be called for chemo or transplant-related issues. Outpatient BMT patients will contact the BMT nursing station, and the nurses will in turn contact you and have you call the patient back. If the patient needs to be admitted, you will need to communicate this to the covering APP and may need to help secure a bed for the patients through the MAO. Occasionally, housestaff on the inpatient MedE service will contact you with questions. The transfer center will contact you with outside transfer requests. Outside MDs with classical heme and oncology questions on patients that are not currently UNC patients (and they are not requesting a transfer) get referred to the Carolina Consults pager (**covered by the Coag and Oncology consult attendings**)

**Tips:**

You may want to create an Epic list of the patients you discuss on your overnight call so that in the morning you can review it and see if there are any issues you need to follow up with that day. You can then clear this list out at the start of each new call.

**All CAR-T calls should go to the CAR-T pager covered by the attending.**

**C.** **Types of calls**

**1. Patient calls:**

These will show up on the pager like this: John Doe DOB 01/01/01. 919-123-4567. The number is the number they have left with the operator as their contact number. The operator should also include a DOB.

As soon as you are able, you will call them back at the contact number listed in the page. When you do this we advise dialing \*67 followed by the patient's number because your personal phone number is then blocked from their caller ID. Alternatively, you can use Doximity Dialer or call the UNC operator (984-974-1000) and ask them to connect you to the patient's phone number. Then you will appear as UNC on their caller ID.

**We strongly recommend briefly viewing the patient’s chart in EPIC before calling back.** If the patient is not a med-onc patient (such as surg-onc or gyn-onc), then **call back the hospital operator** and ask them to redirect the call to that service instead. This will save confusion and time. If you cannot locate the patient based on the info received in the page, or the number seems to be incorrect, it is also worth calling the operator back to clarify the information received.

After you speak with a patient, you **should leave a telephone note in Epic** and make sure to **route the note attending and nurse navigator/trial coordinator.**

If the patient needs evaluation of an acute issue but does not necessarily need to present to the ER overnight, you may schedule them for a **Same Day Acute Care Visit in infusion. These visits are not available on weekends or holidays.** Appropriate issues include N/V, diarrhea, constipation, rashes, pain, etc., and should not be used for acute hypoxia, acute neuro changes, neutropenic fever, or other urgent issues. The process for referral can be found on MedHub. Instruct the patient to check in for registration at 7:30 am the following morning. Once you have completed the encounter, make sure to send an InBasket message to the pool “p\_Adult Oncology Infusion Acute Care Chapel Hill” (1158300000) stating that the patient needs to be scheduled for an urgent infusion visit.

*Common issues:*

- Neutropenic fever (T. 100.4) = go directly to the ER (it's just that simple). Patients actively getting chemo with a possibility of being neutropenic need to get to their local ER immediately and receive IV antibiotics within an hour of their fever. Give instructions to say that they are a cancer patient getting chemotherapy with fever and any ER should know what to do. Let them know that the ER doctor can call you for advice if needed.

- Delayed nausea - Zofran, Compazine and Lorazepam are the go-to's and can be called in to their pharmacy but that also means that they likely have already tried these. If nausea/vomiting is resulting in orthostasis or inability to take any PO --> ER for IV fluids.

- Scheduling issues etc - send EPIC message to appropriate nurse navigator or clinic scheduler

- Refractory pain = ER

**2.** **Outside ER with a UNC patient:**

If this is a problem that you feel comfortable answering, then go ahead and answer it. When giving recommendations this way, be sure to leave an Epic message to the attending and contact information for where the patient is (hospital, MD etc) in case there are further recommendations to give or follow-up needs to be arranged. If transfer needs to be arranged, then arrange either ED to ED vs ED to Floor transfer. If the patient can be treated (febrile neutropenia) at that institution, an Epic message about this to the attending will suffice. If this is a benign heme issue, we strongly advise you to discuss the case with the benign hematology attending on-call. *Outside ERs will often request your approval to discharge a patient (we cannot make this decision). Be very cautious about giving such advice and discuss with the on-call attending if this occurs.*

**3.** **Outside ER with a non-UNC patient, benign heme problem**

This is the role of Carolina Consults (operator is supposed to connect them) and not our role. You have the option to talk with the outside MD and then call the attending for some learning or just redirect them to Carolina consults at (984-974-6318). *Remember when speaking to an outside MD, if they are not a UNC patient, then it must go to Carolina Consults unless they are requesting transfer to UNC.*

**4.** **Outside MD with a non-UNC patient, requesting transfer for possible new heme malignancy (Acute Leuk)**

Return page from the transfer center at 984-974-2000 who will then connect you with the OSH MD. Obtain details about the case with the outside MD (most recent vitals, current labs including WBC with diff, smear if reviewed, TLS labs, coags). Most requests are reasonable for transfer. Once you have completed the call, if likely new leukemia, contact the attending to discuss the case with him/her. Then page the on-call E1 resident to tell him/her about the transfer. Make sure to write a transfer telephone note in Epic and include the on-call E resident, the malignant heme fellow (especially if going to the ICU), and the E1 daytime resident (in case the patient is not expected to arrive until the morning). **If the patient sounds sick and needs priority transfer, page the MAO to discuss so that they may also prioritize a teaching team spot. If there are no inpatient beds available and the patient is still in the ED, then consider an ED-ED transfer. If the patient requires MICU , then route the transfer request to the ICU to accept but offer your input and document in EPIC.** There is a dot phrase in EPIC for initial work-up and management of acute leukemia.

**5.** **Outside MD with UNC patient in hospital, requesting transfer**

See number 4. Most other transfers do not require that you go to the hospital in the middle of the night. If it is a solid tumor patient, then inform the E night resident and route the note to the E2 daytime resident and attending.

**6.** **In-house Consults**

Emergency benign heme consults:

a. Bleeding pt with hemophilia - you don't necessarily have to come in for this but **call the attending for factor dosing**

▶ FVIII dose in units = 0.5 x (desired FVIII-actual FVIII) x wt in kg

▶ FIX dose in units = 1.0 x (desired FIX-actual FIX) x wt in kg

▶ For continuous infusion, roughly 4 units per kilo per hour (both FVIII and FIX)

For hemophilia patients with inhibitors

▶ FEIBA

- Plasma derived mixture of partially activated clotting factors, including VIIa, Xa, IIa

- Dosed at 50-75 units/kg IV q 8-12 hrs

- DO NOT USE if the patient is on Hemlibra

▶ NovoSeven

- Recombinant VIIa

- Standard dosing 90-120 mcg/kg IV q2 hrs x 2-3 doses

b. TTP - ***You will need to come in to look at the blood smear*.** Be sure to have the team order a smear (“MD SMEAR”), LDH, Hapto, Indirect Bili, Direct Bili, DAT, and ADAMTS13 in addition to basic labs. Ask the team to page you when the smear is ready. Once the smear is available, look for schistocytes and then make a call on the diagnosis; please call the attending to discuss. This requires a full consult note, and there is a dot phrase (.TTPTRANSFER and .TTPRECS) that you can use to discuss the PLASMIC score. You will also be responsible for notifying Transfusion Medicine about the case and may need to help arrange for line placement with VIR versus the ICU if the patient is admitted there.

**7.** **BMT Unit and BMT patients that call the unit with questions that the RNs can't answer:**

***You should call the attending with these issues.*** An APP covers the patients overnight, but you are responsible for oncologic/chemotherapy issues.

BMT outpatients will call the inpatient BMT unit at night if they are having problems. The charge nurse will then contact you and give you the patient’s phone number. You should hear their story and then staff this with the BMT attending. If the patient needs to be admitted (and they often do), there are several steps that you must take. Call the BMT attending to discuss the case and formulate a plan. Call the BMT unit and speak with the charge nurse. Inform her of the situation and ask her to arrange for a bed. Then page the covering APP to let them know about the admission.

**8.** **Calls that have to be transferred to a different service (Peds heme/onc, Gyn Onc etc):**

Call the operator to inform them of the error to page the correct service.

**9.** **Hospice calls for UNC patients:**

They are usually requesting changes in medication orders or informing us that a patient has died. Make sure to route a telephone note to the outpatient attending. **You are not expected to sign death certificates for patients in the middle of the night, regardless of what an outside law enforcement or EMS agency may try to tell you.**

# **VIII.** **Chemotherapy Orders**

**A.** **Where to find regimens**

<http://intranet.unchealthcare.org/physicians/hemonc>

[www.pubmed.org](http://www.pubmed.org/)

Epic templates (Beacon home page > hyperspace links > protocol preview reports)

**B.** **BSA Calculators**

<http://www.halls.md/body-surface-area/bsa.htm> (Be sure to change pounds/inches to kg/cm as indicated)

**C.** **How to write chemotherapy**

All chemotherapy orders are written through the Oncology tab in Epic. In this tab you will find treatment plans. Almost all chemotherapy that you write has been preloaded as an Epic template. However, there are a few things that need to be edited for almost every template, especially for patients that are already in the hospital.

The labs section will usually include daily labs (CBC and BMP) which will already be ordered by the house staff. The labs section will also include a pregnancy test for all patients including males, and this will need to be deleted when appropriate. Finally, the pretreatment day can make it so the nurses cannot see the actual treatment day to release the chemotherapy, so this usually needs to be either completed or deleted.

One of the most important things to note is that **there is no trigger to the nursing staff that you have written or modified chemotherapy.** The “okay to treat” order somewhat functions to tell them to look, but you should touch base with the bedside nurse for any patient that you are starting or modifying chemotherapy. **If the patient starting chemotherapy is not located on 4-Onc floor, then inform the 4 ONC charge nurse so that she can send a chemo-certified nurse to administer the treatment.**

Finally, if you are writing chemotherapy for a regimen not already in Epic or if you are converting an outpatient chemotherapy to inpatient, it is best to involve pharmacy help at the beginning as this will save you a lot of time and hassle rewriting the orders later.

For outpatient settings, if a patient is getting chemotherapy in infusion, you enter the orders into EPIC. Your attending can help walk you through this.

**D.** **Infusion Appointments:**

Infusion appointments are scheduled for different lengths of time, depending on how long the chemotherapy takes. Please list the chemo regimen in your appointment request to help the scheduler book appropriately.

**E.** **Other Tips:**

● The pharmacy has a 10% rule, meaning that when they calculate the appropriate dose they will reject your order if it is off by 10%. This also means that you can round a little bit to make things easier for the pharmacist. Mixing 132.45mg of chemotherapy can be tricky. Just round to 132, or even 135. Not a big deal.

● You must include a reference on every chemotherapy order that you write. Most templates include a reference, but if you are creating a custom order, you must include a reference to the article where it came from.

# **IX.** **Procedures**

1. **Procedure Supervision**

At the beginning of the year, all new fellows will need supervision for procedures. We will arrange to “fast track” the fellows who will have Med E (when most of the procedures are done) early in the year with training on procedures during orientation. Other fellows will have time to learn procedures during their Outpatient Oncology months. If you are asked to do a procedure for which you have not yet been trained, your options are: 1) ask one of the E3 APPs to supervise you, or 2) ask one of the senior fellows to supervise you. Ideally, try to arrange supervision a day or more in advance, if you know you will be doing the procedure, so someone can make plans to be there. However, we understand that you don’t always know ahead of time. You are expected to perform a **minimum of 5 BM biopsies and 5 IT chemo under supervision**. If you feel proficient after that, you can perform without supervision. You should arrange supervision until you feel comfortable and have demonstrated proficiency. You should **log all of your procedures in MedHub** and name your supervisor. This will generate an evaluation form for the supervisor to help keep track of how your skills are developing over time.

**B.** **Bone Marrow Biopsy**

**Process:**

1. Consent the patient
2. Confirm if patient is a candidate for trial and if yes, that consent has been obtained from trial coordinator
3. Place the patient on the Heme-Onc procedure list and fill in the sticky note (the APP’s have an Epic smartphrase for what to include in the sticky note)
4. Place orders in Epic (there is an order set “malignant heme…” now)
   1. “Hematopathology order” - be sure to fill in the “collected by” box and put the Attending physician’s name in the comments box
   2. “Cytogenetics cancer / FISH order” (non-blood) – again fill in the “collected by” box and put the Attending’s name in the comments box
   3. “DNA extract and hold” and “RNA extract and hold”
   4. If acute leukemia post-treatment, you will likely also order “MRD”
   5. Make sure you have trial tubes if the patient is a trial candidate
   6. See below for details below from hematopathology about what to order on each patient.
5. Ask the nurse to release the above orders and collect printed labels. You will give these to the Hemepath tech.
6. If patient needs pre-meds, inform team of what you are giving, place order in Epic, and discuss with bedside nurse when to administer
   1. Standard pre-meds include 1-2 mg IV Ativan. Recommend giving ~15 minutes prior to procedure
7. Contact hemepath techs early in the morning at **48322** with an anticipated time for the procedure.
8. Collect supplies: biopsy tray, Ranfac needle (usually 4 inch, 6 inch for obese patients), sterile gloves, 4x4’s, chloraprep, extra 2% lidocaine, black-tip spinal needle, skin marker
   1. In clinic, most supplies are located in the procedure rooms
   2. On 4 Onc, the supplies are in the APP workroom and the supply room.
   3. On other inpatient floors, call the HUC on the floor and tell them you will be doing the biopsy the specific codes that they need to enter into the ordering system:

● Biopsy Tray: 002576

● 4inch needle: 010857

● 6inch needle: 010858

1. Call Hemepath again to let them know you are about to begin. They usually come quickly (in ~5-10 minutes depending on where you are).
2. Head to the room, position patient, perform your TIME OUT, and once pre-meds have been administered, begin.
3. If you are having trouble, ask the hemepath tech to page one of the APPs or one of your co-fellows for help.

**The Procedure:**

You must perform 5 with supervision before going it alone. Check out this video on the New England Journal of Medicine's website: <http://content.nejm.org/cgi/content/short/361/15/e28>

**The Samples:**

● The number of samples you need to collect depends on several factors. First, are you considering enrolling the patient in a trial? Or is the patient already on a trial? If so, you need to talk with the trial nurse about what specific samples need to be collected.

● Aspirate: For non-trial patients, you generally are collecting a few CC's in a syringe with EDTA x 2, and a few CC's in a syringe with heparin

● Core: You want to collect a ~1cm core for all patients. If you have a "dry tap" where you cannot get aspirate, then you will need about 2 core samples to run all the necessary tests

* The Hemepath Tech will be your key reference in this - they will tell you what you need to get.

**Procedure Note:**

You must write the note as a Procedure Note. Templates can be borrowed from other fellows.

**Guidelines for ensuring bone marrow sampling adequacy**

● Initial aspirate should contain spicules; use at least a 20 cc syringe to optimize suction

● The initial aspirate for morphology should be no more than 2 cc.

● Each subsequent aspirate should be obtained after needle repositioning

● Each core biopsy should be obtained by needle repositioning between aspirate and biopsy samples

● Needle may be repositioned within area of anesthetized periosteum using original puncture site

● In the consideration of a new diagnosis of a hematolymphoid malignancy or AML (in which there are <10% blasts in the peripheral blood) and the marrow is not able to be aspirated, three core biopsies should be attempted. At least a 6mm core biopsy is necessary to split for cytogenetic and possible molecular testing.

● In extenuating circumstances (patient tolerability, technically difficult procedure), the clinician should contact the hematopathologist to discuss optimal use of the available specimens.

● Whenever acceptable to the patient, a 5 ml EDTA peripheral blood and marrow aspirate sample should be obtained for the tissue procurement protocol

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **New DX hematologic malignancy suspected** | **Leukemia/MDS** | **Lymphoma** | **Myeloma** |
| **Able to Aspirate** | 2 EDTA  1 heparin:  1 core biopsy | 2 EDTA:  1 heparin:  1 core biopsy: | 2 EDTA:  1 heparin:  2 core biopsies (bilateral): | 1 EDTA:  1 heparin:  1-2 core bx totaling at least 1 cm in length |
| **Can’t Aspirate** | 2-3 core biopsies | 2-3 core biopsies\* | 2-3 core biopsies\*\* | 2 core biopsies |
| **Tissue**  **procurement** | 5 mL PB EDTA (purple top)    5 mL marrow aspirate in EDTA  Cheek swab | \*If a patient with leukemia is not aspirable, but has >10% blasts in the peripheral blood, flow cytometry, cytogenetics and molecular studies may be performed on a peripheral blood sample | \*\*In lymphoma patients who are not aspirable, 1 biopsy should come from one side of the pelvis and the other 2 should come from the other side of the pelvis. |  |

**C.** **Intrathecal Chemotherapy**

**i.** **Via lumbar puncture**

1. Discuss with E resident in the morning about patients who need IT chemo
2. **Make sure to check their platelets and coags to ensure safety of LP, coordinate transfusion if needed.**
3. Determine who will perform the lumbar puncture (you, Med M, or if history of difficult LP, fluoroscopy)
4. Place order in Epic for IT chemotherapy. Make sure to write a “chemo clarification order”instructing where the IT chemo should be delivered (bedside if being performed in patient room vs fluoroscopy if under fluoro)
5. Consent the patient
6. Gather the necessary supplies: LP tray, biohazard bag, sterile gloves, 4x4’s betadine, chemotherapy (from bedside nurse), extra spinal needle if needed
7. Place Epic orders (often part of IT chemo set): “hemepath leukemia flow cytometry, CSF” as well as CSF cell count, CSF glucose, CSF protein. Collect labels from nursing station.
8. Once ready or Med M has arrived, perform a TIME OUT and begin the procedure.
9. Prior to placing your sterile gloves, you will need to do a two-person sign off of the chemotherapy to ensure correct patient name, DOB, chemo order, dose, etc.

**Chemotherapy Orders:**

● These must be written and cosigned the same way as systemic chemotherapy orders. See the Chemotherapy Orders section for details.

● You will need to make a **chemo clarification** for each IT chemotherapy on admission. This clarification should tell the chemo pharmacy where they need to send the chemotherapy (floor or radiology) and confirm when it will be delivered.

● Delivery of the chemotherapy can be slow. Sometimes the pharmacy tells you they will deliver it, and then they don't. If you find you are waiting for a long time, you may just want to go pick it up yourself.

● For all patients going to fluoroscopy for their chemotherapy, there needs to be an order in Epic **LP Fl- IT chemo**. All labs that you want will also be needed to be entered prior to the procedure. Finally, as above, you will need to have submitted the chemo clarification as early as possible

**Lumbar Puncture:**

For a refresher, watch this video on the New England Journal of Medicine website:

<http://content.nejm.org/cgi/content/short/355/13/e12>

**Injecting the Chemotherapy:**

● After gathering the fluid you need for labs, attach the syringe either directly to the needle or via the tubing depending on your preference.

● Inject the chemotherapy SLOWLY ~30-60 seconds per CC. Too fast, and you can theoretically cause herniation or seizures.

● When done, have the patient lie on their back for 30-60 minutes to help prevent headache and circulate the chemotherapy

* Chemotherapy syringe should be disposed of in the biohazard area.

● Label your samples, screw the lids on TIGHT TIGHT TIGHT, put them in a biohazard baggy with your lab slips and Tube them to the Core Lab

**ii.** **Via Ommaya (CSF) Reservoir:**

Similar process as above in terms of consent, checking platelets/coags to ensure safety, placing chemotherapy order and chemo clarification order, etc.

1. Gather the necessary supplies: Lab slips (For outpatients, have your scheduler print these out. For inpatients, order them yourself in Epic and they will print out), biohazard baggy, collection tubes (can be ordered for central supply or from LP tray), 23 G Butterfly needle to access the port, 5 mL syringe, Sterile Gloves, Betadine or Chlorhexidine sponges, an Chemotherapy (written specifically for Ommaya, concentrated to 3 mL)
2. **PREMEDICATE!!** Remember that you are essentially injecting chemotherapy directly onto the chemoreceptors. Most use Lorazepam (2 mg), Zofran, Emend, and prn Compazine – and most patients still get sick.
3. **TIME OUT!!**
4. Pump the plastic port with your finger to circulate CSF (and bring cells into the port if circulating). Then sterilize the area and put on your sterile gloves.
5. Access the Ommaya reservoir using the butterfly needle (syringe attached). Beware that CSF requires some back pressure to flow into the syringe.
6. Collect CSF slowly because changes in ICP cause nausea/vomiting as well. Draw back 4 mL CSF into the syringe, and disconnect, emptying 3 mL into collection tube. Keep collection syringe sterile, use it to flush at the conclusion of the procedure.
7. Then attach chemotherapy syringe and inject over about 5 minutes. At the end of injection, the tubing contains chemotherapy, which you can flush with the remaining 1 mL of CSF.
8. Remove the butterfly needle and place a bandage. Chemotherapy syringe should be disposed of in the biohazard area.
9. Label your specimen and place in a biohazard bag. Send to the core lab.

**Procedure Note:**

There is a standard template note already made for IT/Lumbar Punctures. You can use this template, and add a comment about giving chemotherapy. You should strongly consider creating a custom template for this, to make it easier and faster.

If Med M performed the lumbar puncture, then write a separate procedure note for injecting IT chemotherapy.

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# **X.** **Vacation and Time Off**

**Vacation:**

Each fellow gets 20 days (4 weeks) of vacation per year. During your first year, these must be taken during 2 of your elective months, generally in two week blocks. Be sure to arrange coverage for your pager and InBasket (see below).

**Holidays:**

Most holidays (July 4th, Memorial Day, Labor Day, etc) are treated like normal work days for the inpatient services. The fellow who is on call that evening should take the outpatient clinic pager beginning at 8 AM as usual. We recommend that the inpatient fellows on service divide the outpatient clinic pager amongst themselves for the day until the fellow on call for the evening takes over at 5 p.m.

**The Winter Holiday Schedule:**

This period of time is called WARS (“Working At Reduced Staff”) and can be found on the Google calendar as well. In general, people are working 6 days and getting 6 off over the 12 day period around Christmas and New Years. These days off do NOT count towards your vacation time.

During WARS, we recommend that each group of fellows divide the services amongst themselves, including outpatient call and night coverage.

**Sick Leave:**

Each fellow gets 5 sick days per year. These do not carry forward to the following year. If you know in advance that you will be gone for one or more days, it is your responsibility to arrange for another fellow to cover you and your pager. If you are going to be absent due to an emergency, page the chiefs and email both the chiefs and the program director (Dr. Ma) to inform her. They will coordinate to find coverage for you. In general, the Jeopardy fellow will be pulled to cover other services in the case of an emergency.

See the official Fellows Handbook for more details about sick leave, maternity leave, FMLA, etc.

# **XI.** **Dining**

**Microwaves and Refrigerators**

For those that like to bring food, you can find refrigerators to keep it cold and microwaves to make it hot:

● In the POB (where our offices are), there is a refrigerator and microwave on the 3rd floor in the middle of the building, near the copy machine

● In the Cancer Hospital, there is a nursing lounge on the 4th floor between the B side and C side. Ask a nurse for the code. There are two microwaves in here, as well as several refrigerators and a freezer.

● In the Cancer Hospital, there is a nursing lounge on the 2nd floor between the MultiD and Heme/Onc clinics. Ask a nurse to show you. This is the closest microwave if you are in clinic, and there are several tables and chairs.

**Freedom Pay**

You will get a blue Freedom Pay card from Terri King when you start fellowship which will be automatically funded based on your duty hours (Get money for 12 hour shifts) with some money for food. You can also get your own white Freedom Pay card which you can reload yourself. Most places in the hospital accept Freedom Pay. You sign up for an account at the website below and they will provide you with a card. You can put money into the account, and then use it to pay for stuff. Just swipe the card when the cashier tells you to. Faster than a credit card, and most places give you a discount for using it.

Visit this website to learn more about using Freedom Pay at the hospital (use your email login to access the intranet sites):

<http://intranet.unchealthcare.org/hospitaldepartments/nfs/freedom-pay/>

There are several ways to add money to your account.

1) Use the terminal next to the condiments in the main cafeteria in the Children's Hospital. You can just insert cash into the machine. If you use a credit card, it will charge a service fee, but adding cash is free.

2) Use the website. But watch out for the service fee.

<https://my.freedompay.com/MyFreedompay/index.aspx>

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# **XII.** **Transition to 2nd Year**

The most important decision that you need to make as you move from the first year, which is primarily your clinical year, to “Upper Level” status, is what do you want to get out of your next 2 years. If you think that you have a strong interest in trying out a lab/translational or clinical research project, then go for it! This is your last chance to try on the academic physician hat, so if you think it might be for you then give it a try. If you know in your heart of hearts that academics will never be in your future, then opt for the clinical practice track.

**Research Track**

The research track is designed for fellows interested in pursuing a career in academic hematology and/or oncology. It allows protected research time with minimal clinical responsibilities during your second and third years of fellowship. During this time, it is expected that you will be productive in academic activities such as grant writing, presentation at national conferences and publications. While all fellows choosing to pursue the research track will have the opportunity for protected research time as a part of the fellowship, external funding is highly encouraged and is ideally obtained by every fellow on the research track.

The most common source of funding is through NIH sponsored T32 institutional training grants.There are spots available for fellows on T32s focused on hematology, immunology, translational research and geriatrics, among others. For fellows interested in health services research, there is a T32 from the Agency of Healthcare Research and Quality available through the Cecil G. Sheps Center for Health Services Research as well as a Cancer Health Disparities program through the School of Public Health. The institution may receive funding for additional T32s each year so be sure to check with your mentor, Dr. Ma or the chief fellows for additional opportunities. If there is not a T32 that is applicable to your research, there are other sources of funding available including UNC-specific philanthropic training grants (ie the Pope Foundation Fellowship Grant) and external training grants through foundations focused on the study of specific disease or research types. Typically with the help of your mentors and early efforts to pursue funding, fellows are able to get funded successfully for research. T32 deadlines are typically in January and February. You may also apply for additional grants during your second and third year, including the ASCO Young Investigator Award which several recent fellows have received. There will be specific mentor led sessions regarding grant writing available later this year.

Many fellows are also interested in taking formal coursework during their second and third years. One opportunity to do this is by applying for the Masters of Science in Clinical Research program. This is a two year program offered through the School of Public Health with an application deadline in June to begin in the Fall. Several fellows from the hematology/oncology fellowship and many other fellowships at UNC choose to pursue this each year. If you are not interested in obtaining another degree, there are also options to audit classes either for credit or not. Additionally there are opportunities through the North Carolina Translational and Clinical Sciences Institute (NC TraCS). This is part of the department of medicine and provides many services including bioinformatics seminars, professional development seminars, database skills sessions and scholarly groups for review of larger training grant applications as you transition to junior faculty. They are highly familiar with working with fellows and can be a great resource to discuss career and research ideas as well as funding sources. They also offer pilot grants for smaller projects which may help get a new idea going. Lastly, there are a number of national week-long courses that teach additional skills necessary in academic medicine, including the AACR Vail Conference focused on protocol development and the AACR Molecular Biology in Clinical Oncology conference. These are typically best applied for in your second or third year, with application deadlines in February or March.

Since each fellow’s career goals are unique, we cannot list all opportunities here. By the middle of your first year, you will have a meeting with the chief fellows to discuss your preferred fellowship track. If you have selected the research track, the chief fellows will work with you to ensure you have connections with the appropriate faculty mentors and are aware of pertinent funding and research opportunities. You will also have a mid-year review meeting with Dr. Ma.

Planning ahead and meeting with your mentors are the most important early steps to ensure a successful transition to your research years. Although it is challenging to find time for research during inpatient services, it is important that you set aside some time in the first several months to think about what type of research you are interested in pursuing. You will also have a 2 week elective block where you have protected time to work on ideas for projects, meet with faculty, and most importantly find a mentor. In particular, you need to decide if you will perform bench research, clinical research or health services research. One great way to do this is to talk with other fellows and faculty members about what type of research they do and see what sounds best to you. The chief fellows can also help you get connected to faculty with similar research interests. A few planning meetings, funding and IRB approval before your second year can go a long way to help you hit the ground running.

**Clinical Practice Track**

If there is a chance that you may want to pursue a career in academics, we recommend that you pursue a research track, in order to keep your future options open. However, if you plan to pursue community oncology practice, or wish to focus on bolstering your clinical experience, you may want to consider the Clinical Practice Track.

The basic goal of this track is to give you the broadest clinical experience possible. The details and requirements of this track can be found in the official Fellows Handbook, but typically it involves a minimum of 3 ½ clinic days per week in addition to 1 month per year of inpatient service time. We also highly recommend an outpatient clinic rotation at Rex. You will do several required outpatient clinics in addition to several required electives, including Gyn Onc. You will serve as “second fellow” for the first year fellows during their benign hematology consults. The expectation will be that you orient them to the service, assist with 1-2 consults per day, and provide teaching. You will not be responsible for weekend call while acting as the “second fellow.”

You will be largely responsible for creating your own clinic schedule in addition to your assigned continuity clinic schedule. Discuss with your chiefs or the senior clinic fellows in late winter/early spring of your first year for assistance with how to do this.

You will also still be expected to perform at least one scholarly project. In the past, this has often been large quality improvement projects, though this is not mandatory and you are free to find a mentor and work on any project of your choice (review article, etc.). You must have at least one publication (case reports count) to graduate. Dr. Ma has gotten picky about this.

**Clinics during 2nd and 3rd year:**

If you are on a research track, you will have two ½ days of clinic per week. One of the requirements of being on a T32 is that you agree to protect your research time and do no more than 25% clinical time. During your second year, you will have clinics in thoracic oncology, GU oncology, malignant hematology and benign hematology (if double boarding). During your third year, you will pick an attending who sees patients with your disease of interest and have your own patient panel. You may choose to add an extra half day of clinic. You should talk to your mentor in the spring of your first year to decide when and where your clinic will be.

If you are on the clinical practice track, you will be involved in many different clinics with many different tumor types. You may be able to set up your own tumor- specific template as well with one of the attendings in an area you are interested in. The chief fellows will help set this schedule up for you. You may also have some “second fellow” responsibilities as an upper level but this varies by year.

**Classes**

**For Lab Based Research** – Focused week-long courses or seminars that will be helpful in learning lab techniques or specific things you need for your lab research may be very helpful. A good place to start is to ask your lab colleagues about what courses they found helpful.

**For Clinical Research** – If possible, take advantage of the classes offered through UNC School of Global Health. The most popular classes are Biostatistics (741&742) and Epidemiology (805&806) as individual courses. These will not lead to a degree, but the hope is you would be able to apply it towards a degree if you take them for credit. As a program, we are pushing to take these for credit rather than just audit. There are also two other options – you can either take classes to obtain a Masters of Science in Clinical Research (you obtain a degree) or Translational and Clinical Research Curriculum (TCRC), which is a non-degree, certificate program. The key is that you will have to find your own funding if you would like to obtain a Masters. The TCRC is designed as a means for trainees to gain access to coursework. However, the TCRC also requires that you take all of the courses and so you can’t take just individual courses unless you sign up for them separately.

**How do I sign up for classes?**

This will depend largely on if auditing classes will be an option in the future. The first person to contact is Susan Pusek (suspusek@med.unc.edu). Email her what you want to do and what topics are of interest. She can help recommend classes and then also tell you how to enroll. This will require emailing the professor to see if you can sign up for the course, getting an Onyen that will allow you to get blackboard, and also an application for part time student thru the Friday Center if you are taking it for credit. Also if auditing is an option for the future, you still need to go to Friday Center and pay for the class (it’s about $20) and show proof that you have paid to audit the course. Finally – a word to the wise – the people that run the courses are the same people that will decide your future for institutional grants for employment as junior faculty. So if you sign up for a course, even to audit, go.

Laboratory based courses that fellows have attended in the past:

● Duke runs a Molecular Biology Course for MDs wanting to pick up an intensive course in lab techniques which is quite good:

● <http://obgyn.duke.edu/modules/ob_conf/index.php?id=1>

● ASH runs both a Clinical Research and a Translational Research training course, found on the ASH websites.

**BLS/ACLS certification**

UNC fellows are required to maintain BLS/ACLS certification.

You can enroll in classes for free through the UNC LMS (Learning Made Simple) online course registration system. You can access LMS at:

<https://rod.sumtotalsystems.com/unchcs/app/management/LMS_LearnerHome.aspx>?

Classes can fill up, so be sure to book a spot several months before your license expires!

**Moonlighting:**

UNC Heme/Onc Fellows are not allowed to moonlight during the first year of fellowship. If you plan to moonlight during second and third year, there is a standardized process that can be found on Med Hub to get credentialled. It takes about a month to finish this process so start in May to be ready by July of second year.

# **XIII.** **Miscellaneous**

The inpatient medicine teams at UNC are labeled by letters which can be very confusing. Below is a key of the inpatient teams (as currently designated):

Med\_\_\_\_

A: Geriatrics (at Hillsborough Hospital)

B: Nephrology

C: Cardiology (two teams)

D: Advanced Heart Failure

**E: Malignant Hematology, Resident-Run (formerly Med E1)**

F: COVID ICU

G: Pulmonary Floor/Stepdown

H: Hospitalist, non-Resident

I: MICU, non-COVID

J: Hospitalist, non-Resident

K: Infectious Diseases

L: General Medicine, Resident-run

M: Medicine Procedure Team, Medicine Consults (LPs for IT chemo)

**O: Solid Oncology (Formerly Med E2)**

**Q: Malignant Hematology, APP (Formerly Med E3)**

S: Cardiology procedures, APP

**T: BMT**

U: General Medicine, Resident-Run

W: General Medicine, Resident-Run

X: Hospitalist, Hillsborough

Z: COVID Floor