Thriving on Internal Medicine

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The Basics – words of wisdom from a fellow resident at McMaster

1) **Be ready to work hard**. The first day may run long as you're getting to know a whole new set of patients. You may feel like you have no idea what you're doing. This is normal, will pass, and should only happen once or twice as long as you put in the effort and try to be efficient. Otherwise a normal day should be roughly 8am-5pm.
2) **You are not alone**. MTU gives you a ton of independence and responsibility - the patients you pick up are yours and you have to push to get things done for them, whether that's a consult, a medication change, etc. The ward senior and staff will also be checking up on your patients, but they have to see everyone on the service so they have much less time to address each individual patient. HOWEVER: If you're ever worried about someone, don't hesitate to page the junior or senior residents. **It's always better to feel stupid for calling for help than to feel stupid for not calling for help.**
3) **Economy of thought is priceless on MTU.** There's so much happening with patients on MTU that if you don't try to distill issues down to their most essential points you'll end up getting bogged down in details. Explain things concisely!
4) **Know your patients like the back of your hand, especially active issues.** Because these patients have tons of comorbidities, it becomes a bit of an exercise to find a management plan that will treat a specific issue without making others worse. This becomes exponentially harder if you don't know their comorbidities. **Try writing out a more complete note the first time you see a patient with their past medical history, medications, and a little blurb on their course in hospital thus far.**
5) **Be aware of all the patients on the service, not just yours**. You may have to deal with one of your colleagues' patients if they have issues overnight and you're on call. Also, it helps when running the list and you'll learn way more.
6) **Nobody expects you to know that much**. The biggest thing to have right now for MTU is an approach. If someone has shortness of breath, you don't have to instantly know what's going on and how to fix it. But having a systematic way to figure that out will be indispensable. Most importantly, be safe, helpful and reliable, and friendly!

Being Efficient

1) **Approach to a new patient**: MTU patients tend to have a lot of comorbidities and it helps to have a systematic approach to learning about someone new. Since most MD notes are paper copy in the chart, you'll have to actually go to the ward where the patient is in order to find this information. I found it helpful to pull a progress note sheet out of the chart and copy out the profile (AKA past medical history) and active issues as part of my first progress note on a new patient. You'll learn your patients way better by doing this and time invested here will pay off when running the list.

   Sections of the chart to look through:

   1. History and Physical - has the Admission note
   2. Medication Profile - Always good to check which home meds they were on
   3. Progress notes - Just check the previous 3 days or so; you're doing this to find out which of the issues they came in with are still active and what's currently going on with them.

   Once you've gone through all this stuff, you'll have a pretty good sense of what the patient is all about. This way, you can go see them and ask the right questions!

2) **How to plan your day**: See your sickest patients first. Next see any patients who will need consults from other services, or specific tests organized; if you try to get someone to see your patient at 4:30 on a Friday afternoon, you will not make friends. Similarly, make sure that when you consult you have a well-defined question. There's nothing more maddening than being called for a consult and not really knowing what you're there for.

3) **Being proactive:** You can put in some conditional orders on your patients if you think a particular minor issue may come up in overnight. Common ones are bowel routines, antinauseants, analgesics, and sleeping pills. Since your orders need to be verified, go over them with whoever's on call; they can verify the ones they're OK with and get rid of anything that doesn't fit. Obviously this is for minor, stable issues only.

What to Expect on MTU

Typical Day:

- 8:00 – Handover: team splits the patient list and gets updates from whoever was on call overnight
- 8:15 to 9:00 – Morning Report: If there is no Morning Report start seeing patients
- 9:00 to 10:00 – Meet in ER with the Staff and team
- 10:00 to 12:00 – Round on patients, call consultants, write your notes. Prioritize seeing all patients over writing notes! You can always come back to write your notes. All patients should be seen prior to rounds.
- 12:00 to 1:00 – Teaching
- 1:00 to 2:00 – Finish rounding on patients, call consultants, write your notes.
- 2:00 to 3:30 – Rounds
- 3:30 – 5:00 – Finish outstanding tasks. Handover at 5 pm to person on call

Rounding

1) Review lab work
    - **Address critical values immediately.** Order tomorrow's labs rationally. Note: patients with central lines or PICC lines are ordered as "unit to collect".
2) Examine your patients daily. Basic exam includes:
    - Vitals: recorded in SCM, give 24h range
    - Physical exam: CVS/Resp, Abdo and any additional pertinent exams
    - Review "ins/outs": drains, foley, lines, chest tubes etc.
3) Write a note
    - Date and time always! Every patient gets a daily note (and any seen on call, albeit much shorter). Use SOAP format. Sign your name and leave your pager number. Leave your note in the chart.
4) Communicate with bedside nurse daily
    - See sick patients followed by patients being discharged first
5) ALWAYS consult services early in AM if possible. This is particularly true for hospitalists.
6) Read Allied Health reports
    - Check SCM in DOCUMENTS section relating to PT/OT/TS and other Allied Health
    - These are often missed but can include pertinent data (e.g. patient can't go home because PT is concerned about mobility)
7) Work on Discharge Summaries
    - Think of these as ongoing summaries. They MUST be detailed which often means spending a great deal of time working on them
    - If any of your patients are going home on the weekend, ensure the discharges are up to date prior to leaving that Friday. Also complete any discharges on patients you suspect might go home when you're post-call
    - Follow up Appointments
        - whenever possible, ask the Unit Clerk to book the appointments BEFORE the patient is discharged. Record appointment dates, locations, and contact numbers in the chart AND in the written discharge summary provided to the patient.

See below for discharge summary outline

Handover

- Each day, update the “Health Issues” section of SCM so that they may be integrated into the Handover Document.
- At 1700h Handover: Present your patients succinctly, giving an Identification, relevant Past Medical Issues, Present Active Issues, and Anticipated Overnight Problems.

Call

- Sleep when you can!
- Drink lots of water! Research shows that trainees on IM call go into rhabdo within like 3h
- Patients on ward take priority as patients in ER can be managed acutely by ER physicians. On the ward you are the main doctor overnight – of course with the help of your senior!
- When you don’t know there is always help (i.e. senior med on call). Better to page them then to practice unsafe medicine!

1) What you can do: Although you can't order things on your own, you're an extra set of eyes which is key in the middle of the night. If you're worried about someone, try to do a quick (1-2 min) physical exam before calling the resident as it's much more useful to get a preliminary idea of what's going on rather than just telling them "this person's sick". The only exception to this is if someone is acutely decompensating and needs help right away, in which case you should absolutely be calling the resident and possibly a code if appropriate.

2) Emerg Consults: During the day this is usually handled by the emerg liaison service, but overnight it's all you. You may get paged by the ED to assess a patient, usually by your Sr resident who has already screened the patient as appropriate for MTU admission. In this case, you’ll be writing the admission note and may be putting in admission orders as well (your resident will have to sign off on them, but it’s a good learning experience to do this)

3) Deciding when to call for help: You have three options when calling for help:

a) **Senior**: for things that can't wait until morning but aren't emergent.

b) **Code 66**: for developing situations where you need more help than you have on the wards. Code 66 brings the ICU outreach team as soon as they're available, generally 10-15 minutes. If you do this, also page your resident if they haven’t been already; they won’t appreciate a major development taking place in their absence.

c) **Code blue**: for acute emergencies where you need help NOW. This is code for the ICU outreach team to pretty much drop what they're doing (as long as it's not equally emergent) and come right away. The room gets very full very quickly.

4) WORST CASE SCENARIOS: In the event of an actual arrest, there are only 3 things you can legally do as a medical student. You must do all three of them, in order:

i) Confirm that there is no pulse: check carotid and femoral pulses to be doubly sure.

ii) Activate the code blue, there's a little button on the wall.

iii) Start chest compressions/bag-mask ventilation (BLS stuff)

How To WRITE A KILLER IM Consult Note

Outline:

1. Identification
2. Chief complaint or reason for referral
3. Profile
4. Medications
5. Allergies
6. Social History/Functional Inquiry
7. Family History
8. HPI
9. ROS
10. Physical Exam Findings
11. Laboratory and imaging findings
12. Impression, differential diagnosis and plan

Impression/Plan:

- Most important part of note
- Need to integrate all the information from the history, physical and investigations
    - Show medical reasoning
- Suggest making diagnosis list/problem list and discussing plan for each
- Start with most important diagnosis/problem first
- Some problems may need a differential diagnosis
- **Some will already have a diagnosis and will just need a plan**

Example:

IDENTIFICATION – name, sex, and a one-liner on what brings them in +/- relevant PMHx
77 year old male with 5 day history progressive orthopnea, PND and SOBOE

REASON FOR CONSULT - *Request for admission*

PROFILE – Essentially their past medical history, with an emphasis on the active issues that bring them into hospital; inactive or old issues should go toward the bottom. Include surgeries.

· Try to obtain as much detail as possible for each medical issue

- When diagnosed
- Underlying cause
- Baseline relevant labs (bCr, HbA1c, lipids etc.)
- Any complications from disease or treatment meds
- Primary physician who follows them for this medical issue

*1. Atrial fibrillation (**C H A D S** 4) on warfarin*

- *New diagnosis (approx 2 months ago)*
- *Rate controlled on metoprolol*
- *Managed by Dr. _____*

2. L vs R sided, reduced vs preserved ejection fraction heart failure

- *Secondary to ischemic/alcoholic/valvular/idiopathic cardiomyopathy*

- Followed by Dr. _____ (cardiology) - Last seen 6 months ago, no concerns
- Multiple admissions for same. Last one 1 year ago due to non-compliance
- ECHO June, 2015: Moderate LV dilation, moderate LV dysfunction. EF 30%.

3. Coronary Artery Disease with MI (2005)
- *Followed by Dr. Patzer. Last seen 6 months ago: No changes made*
- *MI 2005 requiring DES in LAD*
- *Last angio 2014: 40% RCA, 50% LCx. DES in proximal LAD patent*
- *Last MPI 2 months ago: Normal*

4. Type 2 diabetes poorly controlled on oral therapy (A1C June 11.4)
- *Diagnosed in 1999*
- *Neuropathy and nephropathy*
- *No retinopathy documented but no eye screening x 5 years*

5. Chronic kidney disease (baseline Cr 230, GFR 20)
- *Secondary to #4 (biopsy proven)*
- *Followed by Dr. Kamar. Last seen 3 months ago. Concerned that patient may need dialysis in next 5 years*

HOME MEDS
- Feel free to just write these on the med req and write "refer to med req", though many find it helpful to write out
- Make sure the meds correspond to the patient's comorbidities. You will find that there are a lot of meds that suggest other medical conditions not already listed

1. Metoprolol 25mg BID
2. Ramipril 5mg OD
3. Spironolactone 100mg OD
4. Lasix 40mg OD
5. Atorvastatin 40mg OD
6. Lactulose 30 mg TID
7. Metformin 1000mg BID
8. Warfarin 5mg OD
9. ASA 81mg OD

ALLERGIES: include reactions

FAMILY HISTORY: Family members with similar conditions is the most important thing

SOCIAL HISTORY - Do they smoke? drink? use IV Drugs? Where do they live? Social Supports? Coping at home?
Smoker with 40 PYH. Remote EtOH abuse as described. No IVDU
- Retired office worker. Married with 4 children. All live in Calgary. + supports
- Lives at home with wife. + home care. Family reports difficulties coping at home x 3 months

HISTORY PRESENTING ILLNESS - This does not have to be long. Try to give a story about what brought them in and screen for other symptoms based on your approach to the issue. *Include both pertinent positives and pertinent negatives.*

Ex. 5 days ago reports progressive orthopnea, PND and SOBOE. One week ago could walk 5 blocks without SOBOE but now can't even go to bathroom without SOB. Previously slept with one pillow but now has to sleep in chair secondary to SOB when lying flat. Denies chest pain, URTI or flu like symptoms. No sick contacts. No cough. Reports taking medications

appropriately. Does report + palpitations and a "racing heart beat" that he has had for over 1 week. Did not measure HR at time but said it was "going fast."

REVIEW OF SYSTEMS – use to rule out other diagnoses on your differential as well as to ensure you aren't missing any pertinent history

COURSE IN ER - Major interventions and improvements/deteriorations
Ex: Given lasix 40 mg IV and metoprolol 5mg IV at 1730 - Less Short of breath

PHYSICAL EXAM - Break things down by system * if you're not sure of a physical finding, document that. It's OK to not be sure. Include vitals at triage AND upon consult

PERTINENT LABS + IMAGING - If abnormal, compare to baseline (i.e., especially helpful for a creatinine, haemoglobin, sodium), or comment on recent results (i.e.. in a GI bleed, helpful to know last Hgb).

IMPRESSION - This is where you separate yourself from other clerks. So far, everything in the admission has just been data collection. While there is an art to data collection, the most important skill to work on in clerkship is the ability to take the data you've gathered and come up with an assessment of what's going on with the patient **and** what you want to do about it. This may be a provisional diagnosis, or more likely a differential and some tests you'd like to do in order to figure out what's going on. Make sure you commit to a plan, even if it's completely wrong. You'll learn way better that way.

Try to write this in 3 sentences or less! Major issue and cause.
What is the issue? What is your differential diagnosis for it? What data support or refute each item on your differential (i.e., historical/physical exam features, investigations)? What have you done for further work-up? What have you done for management? What still has to be done?
Ex: 77 year old male with multiple comorbidities including left-sided HF-REF and A. fib presents with a 5 day history of progressive orthopnea, PND and SOBOE in background of symptomatically worsening A. fib over last 7 days. Physical exam and CXR/ECG confirms heart failure and poorly controlled A. fib. The cause of his worsening A. fib causing heart failure exacerbation is likely due to inadequate rate control as his A fib is a recent diagnosis.

PLAN – list most important issue/most active issues first

· If you don't have a diagnosis, list as a symptom with your differential diagnosis with how you will rule in and rule out each differential in your plan

1. Left-sided, HF-REF exacerbation secondary to poorly controlled A. fib
    - Currently stable but requires further diuresis
    - Lasix 40 mg IV BID with daily weights, ins/outs, salt restriction
    - Should resolve with better A. fib control (see #2)
2. Poorly controlled A. fib
    - Increase home dose metoprolol to 25mg q6h and titrate to achieve HR < 110
    - If tachycardia persists consider other causes such as PE
    - Request Dr. Patzer's clinic notes for further information re: A. fib
    - Continue warfarin
4. DM2, poorly controlled on metformin
    - Start insulin: glargine 10 units QHS, insulin lispro 3 units TID with meals, BBIT
    - Consult diabetic education
5. Miscellaneous
    - Admit to PLC gold under Dr. ____ with Heart failure

- No DVT prophylaxis necessary (pt therapeutic on warfarin)
- PT/OT/TS consults in for disposition planning

*OR For undifferentiated symptoms include your differential diagnosis

Ex: 1. Chest pain – DDx includes cardiac causes such as ACS and myopericarditis, pulmonary causes such as PE and pneumonia, and GI causes such as GERD in the context of increased NSAID use.

a. PE – most likely given the history of recent knee surgery, possible lung cancer, and clinical features of a DVT (as per the JAMA RCE).
b. ACS – Supported by his multiple risk factors, family history; however, low-risk MPI 3 months ago, pain is pleuritic, and ST changes not in a specific territory.
c. Myopericarditis – Supported by the troponin elevation, though the pattern of pain goes against this.

The CT PE is still pending, though given the high likelihood of this being a PE, he has been started on LMWH. We have ordered an echo, and follow up trops. Cardiology has seen, but think it's unlikely to be an ACS.

Admission Orders

**USE the Medicine Admission Order Set on SCM

Remember Mnemonic ADD DAVID so you don't forget anything!

A = Admit to (service, attending physician)
D= Diagnosis (Eg: "Diagnosis: COPD exacerbation ")
D="DNR status" (Goals of care for every patient on admission!)
D= Diet (Eg. DAT = diet as tolerated, renal diet, diabetic diet, NPO = nothing by mouth)
A = Activity (Eg. AAT=activity as tolerated, bedrest, fall risk)
V= Vitals (q4 hours is reasonable for acute patients – increase or decrease frequency by acuity)
I =Instructions to nurse (Eg. daily weights, POCT QID, etc.)
I = I.V. orders (Eg. Maintenance fluids with rate)
I =Investigations **(**Eg. blood work, radiology, EKGs, consultations * blood work for the AM*)
I =Isolation status (Eg. airborne, contact, droplet, etc)
D= **Drugs**

· All the medications the patient needs
- **Home** meds you want to continue
- **New** medications you want to prescribe
- **prn** (=as needed) medications the patient may need
- Should consider **DVT prophylaxis** if indicated - ***use heparin if renal failure**

Discharge Summary

* When you write this, think of that person you saw unconscious at FMC that was hospitalized at the PLC 2 weeks prior and you had no idea what in the world was going on with them.
A lot of this will be very similar to the admission note

Template

1. **IDENTIFICATION**
2. **MOST RESPONSIBLE DIAGNOSIS**
3. **SECONDARY DIAGNOSIS**
4. **PROFILE: will be ~ the same as admission note**
5. **HOME MEDS**
6. **ALLERGIES**
7. **FAMILY HISTORY**
8. **SOCIAL HISTORY**
9. **HISTORY PRESENTING ILLNESS** - Very brief, usually 1 paragraph
10. **COURSE IN HOSPITAL – Best written as issue based**

1. Left-sided reduced ejection fraction heart failure
   - Exacerbated by poorly controlled, recently diagnosed A. fib (HR 130s)
   - Resolved with diuresis and better rate control of A. fib
   - Repeat ECHO demonstrated no change from previous ECHO in June

2. Atrial Fibrillation
   - Required increased dose of home metoprolol to achieve better rate control

3. DM2
   - Due to poorly controlled DM2 we started the patient on insulin
   - Diabetic educator was involved who taught the patient self injections
   - Sugars were well controlled (7-10) at time of discharge

4. Upper GI bleed secondary NSAID induced gastric ulcer
   - 3 days after admission the patient started having melena and a 40 Hgb drop within 24 hours (Hgb 120 to 80)
   - The patient reported taking naproxen 500mg BID for one week prior to hospitalization for headache
   - Patient's melena quickly stopped with pantoprazole drip. No pRBC needed
   - EGD revealed a clean based gastric ulcer (forrest classification III)

11. DISCHARGE PLAN – for each issue above in hospital, write your discharge plan

1. Heart failure
   - Continue increase dose lasix (40 mg BID)
   - Follow up with primary cardiologist was arranged prior to discharge
   - Follow up with GP arranged for 1-2 weeks to check electrolytes given increased lasix dose. A req was given to the patient prior to discharge.

2. Atrial fibrillation
   - HR ~ 80 on increased dose metoprolol (50mg BID)
   - Follow up with Dr. ____ (appointment to be arranged by clinic)

3. DM2

- Continue new regimen of insulin and follow up with family doctor to titrate

4. Upper GI bleed

- Continue pantoprazole 40 mg BID for 6 weeks then step down to home dose 40mg OD indefinitely
- Informed patient to refrain from NSAID use

5. Liver disease with ascites and hepatic encephalopathy

- Repeat US abdomen for HCC screening in 6 months. For GP to organize
- Repeat EGD in 2 years for variceal screening (Dr. _____ to organize)

DISCHARGE MEDS: Include reason for change in space provided

1. Metoprolol 50 mg BID *[increased from 25mg BID for better rate control]*
2. Ramipril 5mg OD
3. Spironolactone 100mg OD
4. Lasix 40mg BID *[increased from 40mg OD for worsened peripheral edema]*

Call Rooms

Available for all rotations with in-house call. There are no rooms for home call rotations.

FMC:

Call rooms for MTU are found in the basement near the med school.

From the main elevators, go to the ground level.
Swing a left and follow the hallway past the radiology area
Eventually, you will reach a mandatory left turn.
Follow the hallway and the call rooms will be on your right side (swipe card entry).
Code for MTU rooms 1500*.

CCU and ICU call rooms are in the units.

PLC:

MTU call rooms are in the basement of the old building/west wing.

From Second Cup:
With your back to Second Cup, go left
Elevators will be on right (these elevators access psych wings)
Go to level OR and the access will be right in front of you
Alternatively go to level O -> Turn right and go up the short staircase.
Swipe card entry to call rooms on right.

CCU and ICU call rooms are near the units. Ask when you start the rotations.

RGH:

MTU, CCU, and ICU call rooms are in the portables. This area also has the Residents' Lounge

Follow the signs for Conference Room 4577.
Go up the stairs and through the door
Will need to enter the code 1234* (the code for everything in trailer park)

SHC:

MTU call rooms are on the 6th floor right beside unit 66.

Useful IM Resources

Apps:

1) **UptoDate**
    - Pricey but worth it! Consider doing a group rate with your class
2) Medscape
    - Free!
3) **Antibiotics**
    - Spectrum – Calgary specific
    - Other choices but more $$: Bugs and Drugs, Sanford Guide to antibiotics
4) MedCalc
5) MD on Call
6) Journal Club

IM resources:

1) This handbook!
2) Approach to Internal Medicine by David Hui
3) Pocket Medicine: The Massachusetts General Hospital Handbook of Internal Medicine
4) MKSAP Series by American College of Physicians (one textbook per specialty)
5) NEJM Knowledge +
6) JAMA Physical Exam
7) Calgary Black Book - Standard approaches/flow charts
8) EKGs: lifeinthefastlane.com
9) ICU: Marino's the ICU Book

Subspecialty Tips:

Nephrology

- Make sure you record ins & outs from the Flowsheets tab in SCM. Know 24h urine output, Net in/out, daily weights
- When presenting your patients, also say what their kidney disease is secondary to (*Eg. CKD secondary to DM),* who their primary nephrologist is, and what type of dialysis they do (iHD vs PD)
- Read up on AKIs and glomerulonephritis - they're very commonly pimped!

Cardiology

- It's extremely important to talk to your patient's nurse about overnight issues. CCU records information in many places, some of which you will not have access to. The nursing staff is an information goldmine
- Make sure to check the patient's overnight rhythm strips. Ask a nurse or someone on your team how to do this

Infectious Disease

- Know cellulitis really well! This will be your bread and butter esp in HPTP clinic!
- The Bugs and Drugs app is a great resource if you find you need more than Spectrum. Sometimes UME has codes for discounts so check with them
- ID likes to know a detailed history of all bacterial infections a patient has had and their susceptibilities with a corresponding complete antibiotic history

Respirology

- Have a good approach to chest xrays and PFTs (obstructive vs restrictive airways)
- Know the light's criteria and the differential for exudative vs transudative - knowing management of complicated pleural effusions will be helpful
- At the clerk level, asthma and COPD is fair game for pimping - knowing interstitial lung disease and your approach to hemoptysis will be helpful
- You most definitely will get asked about causes of clubbing and how to examine for it!

Hematology

- You will be on the ward with sick patients. Don't be afraid to ask for help if worried.
- Have a good approach to anemia!
- Review DIC/TTP/ITP/HIT/HUS/HELLP and sickle cell disease (know sickle cell crisis!)
- Knowing your leukemias and lymphomas, esp AML will be helpful
- You will also likely see Multiple Myeloma

Rheumatology

- This will be all clinic. You won't be assigned to a specific preceptor so you will usually have to ask one of the staff every morning to take you on for the day.
- For your rheum history, ask questions around inflammatory vs non-inflammatory arthritis, symmetry, small or big joints, number of joints, pain vs swelling vs both, functional capacity and then ask specific questions around SLE, vasculitis, spondyloarthropathies, infection and constitutional symptoms.
- Review gout and pseudogout

Endocrinology

- This will also be a combination of a bunch of half day clinics however these clinics will be located all across Calgary. You will likely be driving and eating your lunch in between clinics!
- Know thyroid disease, its exam, and diabetes inside and out!
- Other high yield topics include hyper/hypoaldosteronism (like Addison's!), hypercortisol states (know Cushing disease vs Cushing syndrome and side effects of steroids), and bone disease (We hope you work with Dr. Klein!)

Geriatrics

- With each consult, many of the Geriatricians will like you to address all the patient's issues despite only one question being asked. These consults are very thorough but a lot of fun!
- Review the CAM score and know the differences between MCI and the different types of dementias
- Review your neuro exam as each patient gets one from head to toe!

Medical Oncology

- You aren't expected to know specific chemotherapy treatments. Hurray!
- Review oncologic emergencies
- AHS has fantastic cancer treatment guidelines that are likely more practical than reading UptoDate. You can use the guidelines to prepare for clinics if you know your patients in advance or to read around patients when it's slow

ICU

- Read up on procedures you hope to do, particularly indications and contraindications! Your team will be more likely to let you do procedures if you show that you know what you're talking about. Good resources are videos on NEJM.

References:

1) Marshall, S., Ruedy, J., (2011). *On Call: principles and protocols*. Philadelphia: Elsevier Saunders.