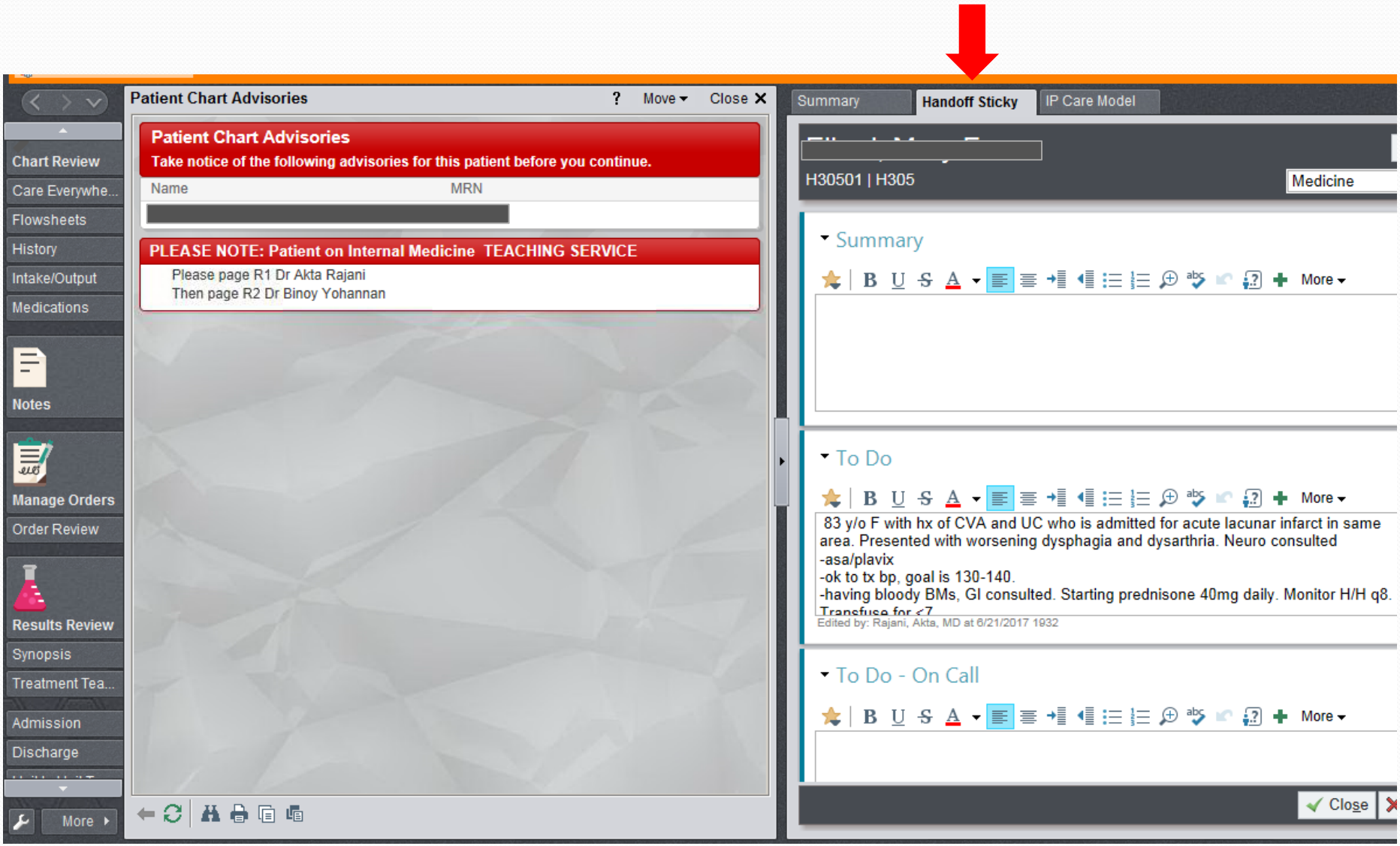
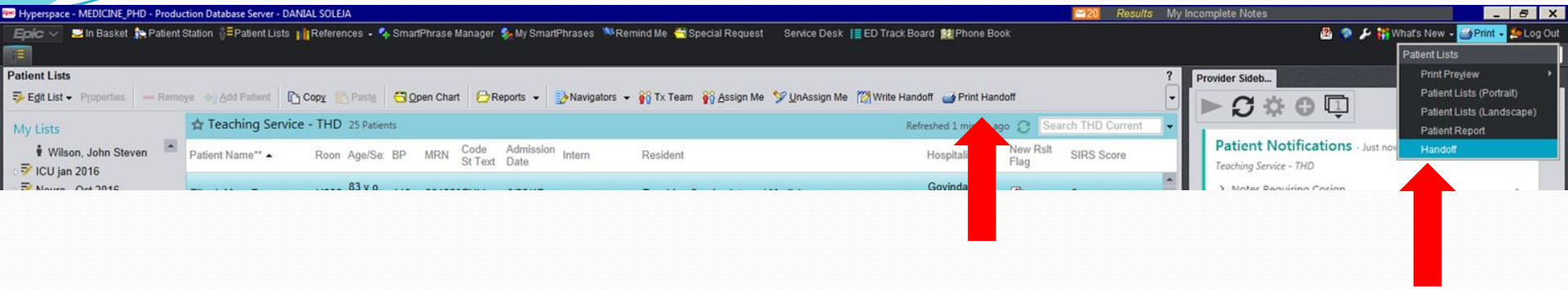
Cross-Cover

Eduardo Trejo, M.D.
Andrew Davis Assaf, M.D.
2018 – 2019 IM Chief Residents

How to make cross cover list

- Click on “Hand Off Sticky” in the patient’s chart - Side Bar.
- Enter any pertinent information, things that need to be done or followed, important information for the day float and on call team to know, etc & click “Accept” or “Close”
- When finished updating all of your patients, click “Print”
- Most recent sign out note for each patient will print
- Write 1) your name and 2) time you will check back in the next day on the back of your list & give to your cross cover person for that day (see bottom of call calendar)
- Let them know about any tenuous patients or things that need to be done (eg: waiting for CT results)
- Call page operator at 5PM (no earlier) and say, “This is Dr.___. I need to check out my pager to Dr. ___ until 7AM/8AM.” DO NOT CALL THE PAGE OPERATOR AT 3PM TO SET A FUTURE CHECK OUT TIME.
- You are responsible for all pages and evaluating patients until you are checked out at 5pm


Patient Chart Advisories
Move
Close
Patient Chart Advisories
Take notice of the following advisories for this patient before you continue.
Name
MRN
PLEASE NOTE: Patient on Internal Medicine TEACHING SERVICE
Please page R1 Dr Akta Rajani
Then page R2 Dr Binoy Yohannan
Chart Review
Care Everywhe...
Flowsheets
History
Intake/Output
Medications
Notes
Manage Orders
Order Review
Results Review
Synopsis
Treatment Tea...
Admission
Discharge
More
Summary
Handoff Sticky
IP Care Model
H30501 | H305
Medicine
Summary
More
To Do
More
83 y/o F with hx of CVA and UC who is admitted for acute lacunar infarct in same area. Presented with worsening dysphagia and dysarthria. Neuro consulted
-asa/plavix
-ok to tx bp, goal is 130-140.
-having bloody BMs, GI consulted. Starting prednisone 40mg daily. Monitor H/H q8.
Transfuse for <7
Edited by: Rajani, Akta, MD at 6/21/2017 1932
To Do - On Call
More
Close


Hyperspace - MEDICINE_PHD - Production Database Server - DANIAL SOLEJA
Results
My Incomplete Notes
In Basket
Patient Station
Patient Lists
References
SmartPhrase Manager
My SmartPhrases
Remind Me
Special Request
Service Desk
ED Track Board
Phone Book
What's New
Print
Log Out
Patient Lists
Edit List
Properties
Remove
Add Patient
Copy
Paste
Open Chart
Reports
Navigators
Tx Team
Assign Me
UnAssign Me
Write Handoff
Print Handoff
My Lists
Wilson, John Steven
ICU jan 2016
Teaching Service - THD
25 Patients
Search THD Current
Patient Name**
Roon
Age/Se
BP
MRN
Code St Text
Admission Date
Intern
Resident
New Rslt Flag
SIRS Score
Provider Sideb...
Patient Notifications
Teaching Service - THD
Patient Lists
Print Preview
Patient Lists (Portrait)
Patient Lists (Landscape)
Patient Report
Handoff

Who do you check out to?

23	24	25	26	27	28	29
E SOLEJA PHILIP SERRANO *Off: SUDHEKAR SUNDARESAN BABY*	A HOSEIN SUDHEKAR *TEACHING A B/D, C*	B KINGSLEY SUNDARESAN *Off: AUSAMA GROVES (FP) YOHANNAN*	C BABY AUSAMA GROVES (FP) *TEACHING A, C, D, E*	D ASSAF UKOHA *Off: SUDHEKAR TREJO*	E KASINDI PHILIP SERRANO *TEACHING A, B, C, E*	A CHRISTENSEN SUDHEKAR *Off: SUNDARESAN KINGSLEY ASSAF*
30	**31**					
B TREJO SUNDARESAN *Off: AUSAMA GROVES (FP) UKOHA*	C KINGSLEY AUSAMA GROVES (FP) *TEACHING A, C, D*					

CALL TEAMS	ATTENDING	RESIDENT	INTERNS
A	M. GUTIERREZ	HOSEIN	SUDHEKAR
B	S. HASAN	KINGSLEY	SUNDARESAN
C	J. KUNIYIL	BABY	AUSAMA, GROVES
D	S. HASAN	YOHANNAN	UKOHA
E	E. WHITTAKER	SOLEJA	PHILIP, SERRANO

CROSS COVERAGE GROUPS

I. PHILIP, AUSAMA, KINGSLEY, SUDHEKAR, UKOHA

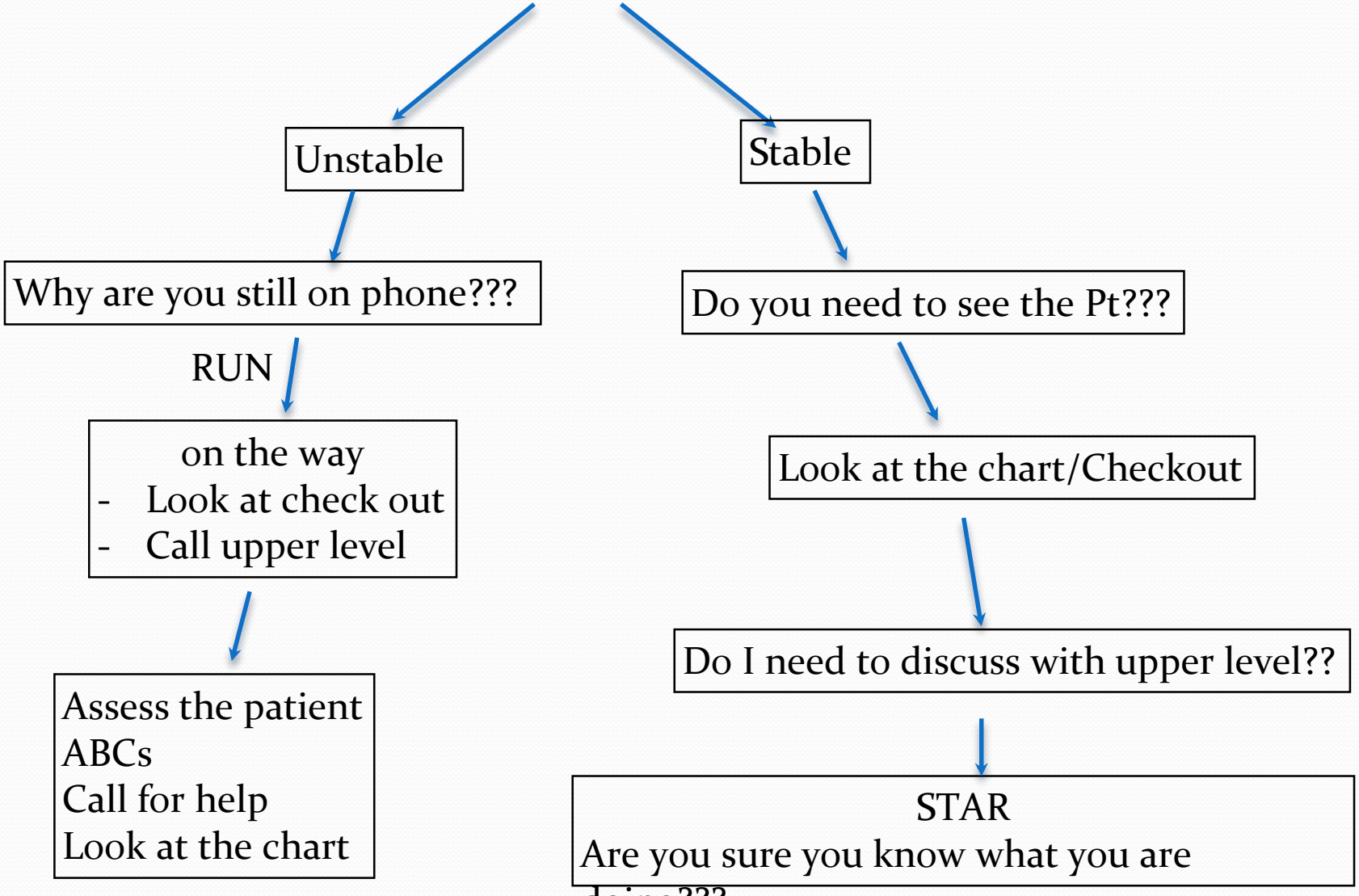
II. SERRANO, GROVES, SUNDARESAN, HOSEIN, YOHANNAN

phdres.caregate.net --> “On Call / Days Off / Night Float Calendars”

When you get called…

- Clarify Which Pt and which R1
- Reason for Call***
- Do not be judgmental about seemingly stupid reason for calls.
- Every call is documented somewhere by RN

Is the Pt stable***



Understand the Patients condition before you act:

- Look at the interns note***
- Why was patient admitted?
- Is this a new or worsening problem?
- Review patient's labs & I/Os
- **Is there a reason to not do what you plan on doing????**

DOCUMENT

DOCUMENT

DOCUMENT

DOCUMENT

Taking cross cover

- Document any calls, events, meds given, etc in Sign Out Report (you may also want to write it down on the paper copy)
- Sign Out Report does not become part of the chart (unless you click “Copy to Chart”)
- Let primary team know about any events

Radiology

- CXR: always try to get a 2-view unless patient will have great difficulty moving
  - Decubitus film to look for layering of effusion
- Head CT: non-contrast to look for bleeding
  - MRI usually better to look for other lesions
- Abdominal CT: IV contrast better for most things
  - Need PO contrast to look for obstruction
- Avoid contrasted studies in patient's with renal failure
- NO MRI contrast for dialysis patients
- **Can always call radiology to see what type of study needed**

Death

- Can be pronounced by 2 RNs
- Check for:
  - Spontaneous or responsive movement
  - Pupillary, corneal, gag reflexes
  - Respirations over entire lung field
  - Heart sounds throughout chest
  - Carotid pulse
- Notify patient's family & attending/covering physician
- Ask family about autopsy if appropriate
- Chaplain will help family with arrangements

Death Note

- Note the time patient was found by nurse
- Document your physical exam findings
- Include time death was pronounced

PICC Lines

- Night RNs are notorious for calling the night float intern and asking if the patient can have a central line knowing you just want to go back to sleep.
- Before giving in…
  - Ask how many times have they tried to put in a PIV?
  - Did the nursing supervisor try?
  - Did they call the PICC nurse to try a PIV via ultrasound?
  - When will the patient be discharged? If tomorrow, then definitely not.
  - Does the patient actually need one in the middle of the night? Can it wait so that the daytime RN can try?
- If all attempts to avoid a PICC line fails, get a midline first!

Closing the loop…

- Wards Interns
  - Please show up by 7AM to get check out from on call team.
  - Be courteous to the on call team, and BE ON TIME!

Specific Situations

Altered Mental Status

- **Go evaluate pt & perform neuro exam**
- Check bedside glucose, electrolytes +/- ABG, ammonia, UA
- If stroke-like symptoms: activate stroke team
  - Order stat non-contrast head CT
- Consider giving Naloxone 0.4-2 mg IV/IM
  - May repeat after 2-3 mins
- Use caution with Flumazenil as this may precipitate a seizure in a patient who is chronically on benzo's
  - 0.2 mg over 30 seconds
  - Repeat dose of 0.5 mg after 1 min if needed, max 3 mg

MOVE STUPID (mnemonic for AMS)

- Metabolic: Na disturbance, hyperCa, ammonia
- Oxygen: hypoxia, hypercapnea, carbon monoxide
- Vascular: stroke, bleed/trauma, acute change in BP
- Endocrine: glucose, thyroid, cortisol
- Seizure/post-ictal state
- Trauma, tumor, TTP
- Uremia
- Psychogenic
- Infection: esp UTI in elderly, CNS, sepsis
- Drugs: esp narcotics, benzos, sleep aids, also w/d, check level when appropriate

Agitation/Combative Behavior

- If patient is not a threat to him/herself or staff, try talking to him/her, re-orienting first, having family stay at bedside
  - Try environmental modification first - dim lights, fewer people in the room, calm tones, etc
- If pulling at lines, trying to get out of bed (and is fall risk), or attempting to harm staff, may need meds
  - Lorazepam (use with caution in elderly) 0.5-2 mg IV/IM
    - Higher doses for DTs
  - Haloperidol 2-5 mg IV/IM
    - Avoid dopamine antagonists in patients with Parkinson's
  - Quetiapine 25 mg PO if recurrent
- Restraints if needed (wrist vs. ankles vs. 4-point vs. posey vest)
  - Caution if about to be discharged. Must be restraints-free for 24-48 hours prior to going to SNU/LTAC
  - Use as last resort

Seizure

- Keep the patient safe- ABC's first
  - Place in left lateral decubitus position to prevent aspiration & don't put anything in the seizing patient's mouth
- When called about a seizure, have nurse have lorazepam 4 mg IV ready at the bedside; give 2mg lorazepam IV and repeat 1-2 mg every one to two min as needed until seizures have stopped
  - Watch for respiratory depression with higher doses of lorazepam
- Check labs- STAT finger-stick blood glucose
- If persists: call neurology
  - Can give phenytoin/fosphenytoin as a loading dose
- Consider transfer to higher level of care (ICU) if needed

Delirium Tremens

- Give Lorazepam 1-4 mg IV (or IM)
  - Repeat at 15-20 min intervals as needed
- Give Thiamine 100 mg IV
- Give glucose, multivitamins containing or supplemented with folate, and correct potassium, magnesium, and phosphate deficiencies
- Avoid Haloperidol as this decreases seizure threshold
- Refractory cases may require transfer to ICU for drip

Falls

- **Go to evaluate pt, perform neuro exam, & look for signs of trauma**
- Why did patient fall? Mechanical? Pre/syncope? AMS? Check medication list.
- Did patient lose consciousness?
  - Before the fall: check telemetry, glucose, labs, vitals
    - Transfer to telemetry if concern for cardiac etiology
  - After the fall: consider getting head CT if concerned about head trauma
- Do you need other imaging? (wrist films, hip films)
- Place patient on fall precautions
- Order neuro status checks if indicated

Dyspnea

- A symptom, not a disease or diagnosis; have to figure out why
- Pulmonary Causes: PNA, PTX (recent chest procedure?), PE (consider checking D-dimer, CTA, V/Q scan, lower extremity dopplers), COPD, asthma, aspiration (elderly, patients who have vomited, or with recent loss of consciousness), mechanical obstruction, ARDS
- Cardiac Causes: CHF, MI, tamponade, arrhythmia
- Acid/Base Disturbances: Metabolic acidosis, respiratory alkalosis
- Hematologic Causes: Anemia, hemoglobinopathies, cyanide toxicity
- Psychiatric Causes: Anxiety, panic attack
- Check O2 sat, give oxygen as needed*
  - Call resident if you think patient needs to be intubated
- Check CXR, ABG, EKG, CBC
- Wheezing: give albuterol or duonebs
- Crackles: check I/O's, stop IVF & consider giving Lasix
- Copious respiratory secretions: suction
- ICU transfer?

Oxygen Delivery Methods

- Standard Nasal Cannula-
  - Delivers an inspiratory oxygen fraction (FiO_2) of 24-40% at supply flows ranging from 1-5L/min
- Venturi Mask-
  - Mixes oxygen with room air, creating high-flow enriched oxygen; provides a constant FiO_2 and typical FiO_2 delivery settings are 24, 28, 31, 35 and 40% oxygen
  - Often used when there is a concern about CO_2 retention
- Simple Face Mask-
  - Delivers an FiO_2 of 40-60% at 5-10L/min; useful for pts who are strictly mouth breathers
- Nonrebreather Face Mask-
  - Indicated when FiO_2 >40% is required; may deliver FiO_2 up to 90% at high flow settings; oxygen flows at 8-10L/min; must be tightly sealed on the face and there is also a risk of CO_2 retention
- BiPAP- BiLevel Positive Airway Pressure
  - Uses two pressures during breathing cycle- an inhale pressure and exhale pressure
  - Used in pts who need respiratory assistance or in pts with COPD
  - Differential in inspiratory and expiratory pressures aids in the removal of excess carbon dioxide CO_2

Chest Pain

- Check vitals, EKG, CXR, cardiac enzymes, cardiac exam
- Anginal: give oxygen, nitroglycerin (if BP OK)
- New murmur, rub: may need stat echo
- “Tearing:” consider aortic dissection
- Pleuritic: consider PE, PTX, pleural effusion
- Musculoskeletal: reproducible on exam?
- Gastroesophageal: try Maalox
- STEMI: activate STEMI team, call cardiology

Hypotension

- See patient immediately.
- Is patient tolerating blood pressure?
  - Yes—repeat BP on other arm, leg; measure it yourself with a manual cuff; **MAKE SURE ALL VITALS ARE CURRENT**
  - No—fluids, fluids, fluids (cautiously if heart failure)
  - If patient is unstable, call a Rapid Response or potentially a Code
- Is there evidence of shock (septic, cardiogenic, hypovolemic)?
- Consider ICU transfer for pressors if not responding to fluids
  - Norepinephrine: 2-30 mcg/min (watch for bradycardia)
  - Vasopressin: 0.04-0.08 u/min
  - Dopamine: 1-2 mcg/kg/min (watch for tachycardia)
- If concern for sepsis: blood & urine cultures, CXR, lactate
  - Empiric antibiotics (*after getting cultures*): vancomycin or linezolid + piperacillin/tazobactam + levofloxacin
  - Transfer to ICU for sepsis protocol

Hypertension

- Recheck the reading manually; check the other vital signs; quick chart review; what do they take at home?
- Review vital sign trends. Is this new?
- Severe HTN: systolic blood pressure ≥180 mmHg and/or diastolic blood pressure ≥120 mmHg; no end organ damage
- Hypertensive emergency: Evidence of END-ORGAN DAMAGE
  - Brain: AMS, lethargy, stroke, seizure
  - Eyes: Changes in vision, papilledema, flame hemorrhages
  - Cardiac: Chest pain, heart failure, EKG with strain or ischemic changes, SOB
  - Renal: low urine output, edema, elevated Cr, hematuria
- If patient has BP meds ordered, may give dose early
- If patient has been admitted for stroke, may be allowing for permissive hypertension
- If not severely elevated, no need to lower acutely
- Can use PRN meds:
  - Clonidine 0.1-0.2 mg PO Q4-6H (may cause sedation, bradycardia)
  - Enalaprilat 1.25-5 mg IV Q6H (monitor renal function)
  - Hydralazine 10 mg PO or 10-20 mg IV Q4-6H (watch for tachycardia)

Hypertensive Emergency

- If >/= 180/120, look for signs of **end-organ damage**
  - Perform fundoscopic exam
  - Head CT if neurologic deficits
  - Check chemistries, UA, cardiac enzymes
- Decrease MAP by no more than 25-30% in first few hours
- Labetalol 20 mg IV (watch for bradycardia)
- Hydralazine 10-20 mg (watch for tachycardia)
- If unresponsive to boluses, transfer to ICU for drip
  - Nicardipine gtt
  - Labetalol gtt
  - Or nitroprusside gtt esp if pt has cardiac ischemia

Arrhythmias

- ALWAYS LOOK AT THE EKG YOURSELF!
- Unstable tachyarrhythmia: shock 100 J synchronized
- Stable w/ narrow complex tachyarrhythmia:
  - A-fib w/ RVR: rate control w/ nodal blocker
    - Diltiazem 5-10 mg IV over 2 mins
      - Repeat after 15 mins if needed
      - Then start drip if needed @ 5-15 mg/hr, stop if hypotensive
    - Digoxin if BP low: 0.25-0.5 mg IV
    - Call cardiology
  - SVT: try vagal maneuver first, then Adenosine 6 mg IV
    - Rapid push, may repeat w/ 12 mg
  - VT: non-sustained
    - Non-sustained: check Mg and K

Arrhythmias

- Stable wide complex tachyarrhythmia:
  - Adenosine 6-12 mg rapid IV push (have defib on hand)
  - Then try Amiodarone 150 mg (*NOT with Torsades)
  - Torsades: Magnesium 1-2 g over 5-20 mins
- Unstable bradyarrhythmia:
  - Atropine 0.5 mg Q3-5 mins, max 3 mg
  - Start a drip if ineffective:
    - Dopamine 2-10 mcg/kg/min
    - Epinephrine 2-10 mcg/min
  - Prepare for transcutaneous pacing
  - Call cardiology

Nausea/Vomiting

- Medications: narcotics, antibiotics, & many others
- Obstruction: Check for bowel sounds, KUB.
  - NPO, NG tube, call surgery
- Pancreatitis: Check lipase. Consider US or CT scan.
  - NPO, aggressive IVF, pain control
- Elevated intracranial pressure: Neuro findings? Check CT.
  - Call neurosurgery
- Vestibular disorder: Vertigo? Nystagmus?
- Metabolic disturbance: Uremia, DKA, para/thyroid, adrenal insufficiency
- Others: Myocardial infarction, Infection, Migraine, Indigestion
- Symptomatic relief:
  - Ondansetron 4-8 mg ODT or IV
  - Promethazine: 12.5-25 mg PO, PR, IV
  - Others: Metoclopramide, Prochlorperazine, Lorazepam, Meclizine

GI Bleed

- Upper: ulcers, varices, portal hypertensive gastropathy, gastritis/esophagitis, Mallory-Weiss tear, angiodysplasia, neoplasm, Dieulafoy's lesion
- Lower: hemorrhoids, diverticula, colitis, AVM, neoplasm, ischemic bowel
- Check vital signs (first to change) and orthostatic vital signs (+ with 20% loss)
- NPO
- 2 large bore IVs
- Monitor H/H (Note, Hct may be normal for 8 to 24 hrs)
- PT/INR/PTT
- BUN: suggestive of GIB if elevated w/o hx of renal disease
- Type an Cross
- Plt count
- IVFs
- NG tube: Lavage until clear
- GI consult
- GUAIAC/rectal exam
- PUD: Pantoprazole 80 mg IV bolus, then 8 mg/hr infusion; ENDOSCOPY
- In cirrhotics/variceal bleeding: Octreotide 50 mcg IV bolus, then 50 mcg/hr infusion

Prophylactic Ceftriaxone 1 g/day IV

Decreased Urine Output

- Defined as <0.5mL/kg/hr
- If volume depleted, try giving fluids
- May try giving diuretic, i.e. in pt with extreme volume overload such as end stage CHF pt
- Check bladder scan or post-void residual volume
  - Place Foley if > about 300 ml
  - If unable to place Foley, call urology
- If they already have a Foley, check Foley placement/try flushing it
- If decreased PVR, determine the cause: poor flow to the kidneys because of heart failure, hypovolemia, sepsis/shock
- With renal failure check US to look for obstruction/ hydronephrosis
- If PVR is 100-200cc's, continue to monitor closely for another couple of hours

Hyperkalemia

- Most common cause is hemolysis—recheck
- Check EKG to look for changes
  - Peaked T waves, flattened P, PR prolonged, QRS wide
- For life-threatening/severe:
  - Calcium gluconate 1-2 g IV over 2-5 mins +
  - D50W 50 ml + Insulin 10 units IV
- With acidosis: Sodium bicarbonate 50-150 mEq
- Albuterol 10-20 mg nebulized can also be used
- Lasix or kayexalate if > about 5.5 and no need for urgent correction

Positive Blood Culture

- If 1 of 2 is positive with Gram positive cocci, it may be a contaminant
  - However, if the patient is very sick, running fevers, and/or has a central line/PICC/port, you may want to cover with antibiotics
  - Consider repeating cultures
- If 2 of 2 or Gram negative organisms, start patient on empiric antibiotics
  - Ceftriaxone for Gm neg (Zosyn if risk factors for pseudomonas)
  - Vancomycin or Linezolid for Gm pos

Fever

- May not always be from infection—DVT, transfusion reaction, alcohol withdrawal can also cause fever
  - Check doppler if concern for DVT
- Does the patient have signs/symptoms of infection?
  - Order appropriate studies (CXR, respiratory cultures, UA)
- Check blood & urine cultures if they have not been done in the last 24 hours
- Don't need to start antibiotics unless there is a clear source or positive cultures

Transfusions

- PRBC indications:
  - Symptomatic anemia regardless of H/H
  - Acute blood loss with evidence of inadequate O2 delivery
  - Hgb </= 7 for most patients
  - Post operative Hgb of </= 8
  - Hgb </= 8 for active bleeding, patients with heart/lung disease or undergoing chemotherapy
  - May need irradiated and/or leukoreduced for patients with hematologic malignancies/immunosuppression
  - If history of CHF or CKD, transfuse over 4 hours
  - Each unit pRBC has volume of 300cc and should raise hgb by 1g/dL and Hct by 3% unless active bleeding

Transfusions

- Platelets indications
  - < 10 K in non-bleeding pt with marrow suppression; consider higher threshold (< 30 K for pts who are febrile/septic)
  - < 50 K if actively bleeding or before surgery
  - < 100 K if CNS bleed or before CNS procedure
  - < 20 K for most bedside procedures
  - 1 unit of plt is equivalent to 4-6 pooled donor units
  - 1 unit should raise plt count by 30K

Transfusion Reaction

- Febrile non-hemolytic reactions: Symptoms include fever, chills, mild dyspnea, and malaise 1-6 hours after transfusion
  - ▪ Etiology is from cytokines that are generated and accumulate during the storage of blood components
  - ▪ Benign and without any lasting sequelae, but cannot distinguish initially from acute hemolytic reactions so the initial treatment for both the same
  - ▪ Treat by stopping the transfusion, IVF's, draw appropriate labs, and antipyretics

- Acute hemolytic reactions: Medical emergency from rapid destruction of donor RBC's by preformed recipient antibodies
  - ▪ Most commonly due to ABO incompatibility from clerical error…on occasion can have acquired alloantibodies like anti-Rh
- Symptoms: The classic triad of fever, flank pain, and red/brown urine (hemoglobinuria) is actually rarely seen. Other symptoms include chills, flushing, nausea, chest tightness, malaise
  - ▪ Treatment includes stopping the transfusion, initiating protocol for transfusion reactions (i.e. blood bank checks for clerical errors), maintain ABC's, start IVF's (Normal Saline), and check a direct antiglobulin (Coombs) test, Hemoglobin, and repeat T&C from the other arm.

TIPS

- You can access this powerpoint on the phdres.caregate.net website.
- Reference this PPT on day float.
- When in doubt, examine the patient. You may also call your resident or talk to the ICU extender or ER.
- Do not put in orders on a patient that is NOT on teaching service.
- Relax!

References

- Ari M, et al. University of Colorado Anschutz Medical Campus School of Medicine Intern Guide. 2014-2015. http://www.ucdenver.edu/academics/colleges/medicalschool/departments/medicine/intmed/imrp/Documents/Intern%20Survival%20Guide%202014-2015.pdf
- Inpatient Oxygen Therapy. American Thoracic Society. Last rev Feb. 2015. http://www.thoracic.org/copd-guidelines/for-health-professionals/exacerbation/inpatient-oxygen-therapy/oxygen-delivery-methods.php
- What is BiPAP. American Sleep Association. https://www.sleepassociation.org/cpap/bipap/
- UpToDate

- Questions?