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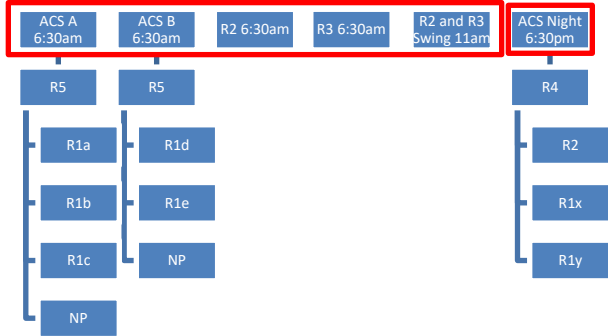
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Welcome to the ACS rotation. We, the ACS attendings, would like to thank you in advance for your hard work and dedication to our patients and our service. We hope you will enjoy your rotation with us and learn more about the challenges of caring for acutely ill surgical patients and trauma patients. We know this will be a challenging month with a lot of patients, consults, traumas, etc. We hope this information helps you navigate the ACS service, helps you manage surgical patients, and helps you learn some skills to take with you on your journey. This handbook will be updated as the service changes and grows

Team Organization

Who are we?

- The Acute Care Surgery service (ACS) cares for the acute/emergent surgical patients as well as all trauma activations.
- ACS is composed of two teams ACS A (red dot) or ACS B (blue dot) and the ACS night team



- *****Some months will have a daytime R2 swing, R3 ACS Elective/Flex, R4 Malawi**

Two Teams One Service


- Even though there are two teams we function jointly as one large team. If the other team is busy and you are not on call, you should ask what you can do to help the other team
- If you are called for a patient on the other service make sure it is not an urgent issue before providing the nurse with the pager number to the appropriate intern. If it is urgent you should immediately attend to the patient yourself while you contact the other team.

Who to Call for Help

- If you have a problem with a patient and you need help managing the patient call people in the following order:
 - Your senior
 - Your attending

- The other senior
- The other attending
- The SICU attending
- Dr. Mukherjee
- If a patient is doing poorly remember you can call a rapid response for additional nursing help and a MICU resident.
- Call a code blue if a patient needs urgent intubation or loses pulses.
- You will never be disciplined for asking for help, if you are unsure, ask for help

The “On Call” Team and Who is Admitting

- On weekdays A and B alternate call days.
- The on call team admits patients during the daytime
- Overnight patients go to the daytime backup team
 - Always ask the senior which team is admitting (especially on weekends).
 - If a patient was recently discharged from a specific team they will return to the original team even if the other team is on call. The on call team will still see the patient and complete the H&P, orders, and place the patient on the appropriate team list.
-  Obs vs admission: Some patients cannot be placed in “obs” status due to their insurance (Medi-Cal and IEHP). These patients must have a full inpatient admission. The ED social worker can help with determining the insurance status for patients. In other cases (nonperforated appendicitis) patients may not be admitted but may go to OR and then home. Make sure to discuss with senior/att/ED social worker.



Pagers

- There is a senior pass around pager for traumas. The on call senior will carry this pager (pager 4082)
- The PGY-2 will carry the ED consult/trauma pager (pager 2430)
- The on call intern will carry the on call floor pager and call the 2nd year for all floor consults while the team is still rounding (pager 1890)

Lists

- The list is found on LLEAP. If you do not have access please talk to your NP. Lists are printed directly from LLEAP. Additional service materials are found on the share drive
 - Choose computer->shared “S” drive->UHC surgery->Surgery Residency Program->Services->Acute Care Surgery (electronic copy of this handbook and other orientation materials)

Call Room

- The junior call room is located on the vintage hospital 8th floor room 8002. Day and night chief call room 10a-106 CTP
- Work area for ACS will be the large workroom on the end of 15-W.
- If you don’t have badge access call Amy in the General Surgery Residency Office at 44289 so she can submit the request for access. She will then instruct you to contact Security. **DO NOT** prop the door or prevent the lock from locking as people have had items stolen from the room and we have found patient’s family members in the call room when the door is propped.
- CLEAN UP AFTER YOURSELF!!! Housekeeping doesn’t clean the room often but they change the bedding and empty trash. If they haven’t changed the bedding, or the trash is overflowing, please call them to come clean. You are responsible for keeping the rest of the call room clean.
- If you leave food in the fridge please throw it out – no one but you cleans the fridge!
- If there are any persistent problems with the call rooms please notify Amy Albright or Sandy Swanson in the residency office.
- If the computers or printer are not working or need paper/toner please notify Tonya Henkes

Weekly Schedule

Shifts

- Day Resident: 6am to 7pm with 30min between 6:30 and 7pm for sign out
- Night Resident: 6:30pm to the end of morning report (7AM ish)
- AM signout at 0630 in CP21109 unless otherwise notified (0830 on Wednesdays)
- PM signout at 1830 in CP21109
- After AM signout all junior residents/NP's need to split the list and preroound on their patients (including discharging patients if so requested).

ACS Educational Sessions

The NPs will hold the ED trauma/consult pager and respond to floor pages on Wednesday 7-8:30am and Friday 11:30-1pm

Session	Day and Time	Location
Trauma Quality Improvement Meeting (<i>for R5s only</i>)	Monthly 4 th Monday 5-7pm	Coleman Pavilion 21109
R3 ACS Resident Interesting Case Presentation	Tuesday 7-7:20am	Sign-out Room
Multidisciplinary Rounds: provide overview of your patients with emphasis on needs pertaining to case management, discharge, speech/physical/occupational therapy and social work	Tuesday 9-10am	Zoom, 8 th Floor Family Conference Room
General Surgery Didactics (<i>ED and Ortho attend their own conference</i>)	Wednesday 6-7am	Zoom, Coleman Pavilion 21109
General Surgery Grand Rounds and M&M (<i>ED and Ortho attend their own conference</i>)	Wednesday 7-8:30am	Zoom, A level Amphitheater
Emergency General Surgery M&M and QI	Wednesday 2-3pm	Coleman Pavilion 21109
Trauma Simulation	Monthly Thursday 8-9am	Centennial 4 th Floor Simulation Center
R4 ACS Resident Interesting Case Presentation (when R4 Malawi Resident is on service)	Thursday 7-7:20am	Sign-out Room
Trauma Conference: M&M, Journal Club, Book Chapter Review, Research Conference	Friday 11:30am – 1pm	Coleman Pavilion 21109

There will be times where residents can sign each other out prior to end of shift to minimize going over hours. This is based on clinical volume and acuity and **MUST be discussed and approved by the RS**. If hours are acceptable the team stays in house and can access the educational materials.

ACS Clinic

- **Monday 13:00 – Supplemental ACS Clinic**
 - 2nd floor surgery clinic FMO building, suite 2100
 - Staffed by non-call team intern
 - No scribe (resident writes notes)
 - Capped at 12 patients
- **Thursday 13:00 – ACS Clinic**
 - 2nd floor surgery clinic FMO building, suite 2100

- Staffed by non-call team interns, medical students, senior
- Interns from the call team may be called to clinic if needed
- 2 Scribes (starting mid-July 2021) who will write notes for all patients presented to and seen by attending
- Scribe will not write notes for patients seen only by chief resident

Resident Responsibilities

(see separate documents for resident level specific goals and objectives)

R1 Daytime Responsibilities (not all-inclusive)

- Read all orientation materials and this handbook
- You are responsible for the majority of the floor management under the supervision of the senior resident and the nurse practitioner. Floor management entails:
 - Pre-rounding on patients and writing the daily progress notes
 - Update problem list for each patient you are assigned
 - All patient care orders during and after rounds- should be reviewed daily and unnecessary or duplicate orders should be removed
 - Discharge summaries
 - Consents (with your senior's help if you are uncomfortable)
 - Daily rounds with the Senior and Attending
 - Daily communication with the case manager and social worker on all units
 - Ensure EPIC lists are updated
 - Backup team interns attend Monday and Thursday afternoon ACS Clinic
 - Intern level OR cases
 - Respond to Floor Consults *the R2 and R3 will assist with this responsibility while the R1 is rounding*

 - Complete all notes, orders, scripts, referrals, and follow-up for the patients you see in clinic
 - Attendance at the mandatory meetings/events listed in the schedule section
 - You will need to prepare a 10min power point presentation (5 slides only) on a journal article for trauma conference. The senior will assign you the article.
 - Assist in teaching and evaluating medical students
 - A resident must see all patients assigned to a medical student and complete the progress note in the chart

R2 Daytime Responsibilities (not all-inclusive)

- Respond to consults (ED) and traumas. All requests must be run by the ACS senior and/or attendings and require a one-hour response time with preliminary recommendations in the chart by 2 hours. This means staffing the consult immediately after seeing the patient (come to the OR, come to the floors-find the senior or attending!). Place Consult note to stop the timer. If patient is being admitted place orders (admission vs observation dependent on insurance status so contact ED case manager for correct status), notify floor interns, update problem list. If patient needs an operation place OR case request and consent.
- Perform Floor and ED procedures and as appropriate provide oversight for intern level procedures
- Sign-out ACS admissions or consults we will follow to the ACS Interns
- Respond to Floor Consults *the R2 and R3 will assist with this responsibility while the R1 is rounding*

R2 Swing Responsibilities (not every month) (not all-inclusive):

- Follow-up patients admitted or consulted on that day
- Assist R2 with consults (ED) and traumas. All requests must be run by the ACS senior and/or attendings and require a one-hour response time with preliminary recommendations in the chart by 2 hours. This means staffing the consult immediately after seeing the patient (come to the OR, come to the floors-find the senior or attending!). Place Consult note to stop the timer. If patient is being admitted place orders (admission vs observation dependent on insurance status so contact ED case manager for correct status), notify floor interns, update problem list. If patient needs an operation place OR case request and consent.
- Respond to Floor Consults *the R2 and R3 will assist with this responsibility while the R1 is rounding*

R3 Responsibilities (not all-inclusive):

- Provide continuity of care for the patients admitted overnight (see ACS primary or consult patients still in the ED)
- Provide operative coverage in discussion with R5
- Provide consultation for all off site consultations (East campus and Surgical Hospital) -*will primarily go to R3 swing*
- Assist both teams in the care of the ACS patients
- Assist R2 with responding to ED consults and traumas.
- Assist R1 with responding to floor consults
- Give Tuesday morning lecture at ACS sign-out for 20 mins (provide interesting cases with corresponding learning points and recent literature review)
- Acts as Chief if either ACS team does not have an R4 or R5
- *If the R2 is off and no Swing R2 is available the R3 will take on the role of ED consults and traumas*

R3 Swing Responsibilities (not all-inclusive):

- Provide consultation for all off site consultations (East campus and Surgical Hospital)
- Follow-up patients admitted or consulted on that day
- Provide operative coverage in discussion with R5
- Assist both teams in the care of the ACS patients
- Assist R2 with responding to ED consults and traumas.
- Assist R1 with responding to floor consults

R3 ACS Elective/Flex Responsibilities (not every month) (not all-inclusive):

- Follow-up patients admitted or consulted on that day
- Provide operative coverage in discussion with R5
- Assist both teams in the care of the ACS patients
- Assist R2 with responding to ED consults and traumas.
- Assist R1 with responding to floor consults
- Acts as Chief if either ACS team does not have an R4 or R5

R4 Malawi Responsibilities (not every month) (not all-inclusive):

- Provide operative coverage in discussion with R5
- Serve as trauma captain in the management and decision making of the trauma patient
- Perform and instruct junior residents on how to perform bedside surgical procedures
- Acts as Chief if either ACS team does not have an R5
- Give Thursday morning lecture at ACS sign-out for 20 mins (provide interesting cases with corresponding learning points and recent literature review)

R5 Daytime Responsibilities

- Lead, organize and supervise the service including pre-rounds, rounds, daily management of patients
- Assist in the delegation of daily service duties such as surgery, rounds, clinic and consult to the junior resident staff
- Attend morning report, multi-disciplinary rounds, lectures, ACS clinic, and trauma conference
- Serve as trauma captain in the management and decision making of the trauma patient
- Perform and instruct junior residents on how to perform bedside surgical procedures
- Trauma conference presentation. Each R5 will present once during their ACS rotation during trauma conference (Book chapter review)

- Ensure one senior resident (R4 or R5) attends Thursday ACS clinic
- Complete weekly M&M to present every Wednesday at EGS M&M and every 4th Friday at trauma conference
- Attend on Trauma QI meeting during the year
- Take a mock oral exam prior to completing the rotation
- Assist with medical student education and evaluation ensuring that every OR case, trauma activation and consultation is with a medical student

R1 Nighttime Responsibilities

R1x covers ACS inpatients and ACS inpatient consults, Vascular Surgery, General Surgery and Surgical Oncology inpatients

- You will cover calls for patients at Surgical Hospital as well. There is an anesthesia resident in-house at Surgical Hospital who can go see a patient if it's emergent/urgent. Notify the night senior of any problems with Surgical Hospital patients and they will call the back-up resident to drive in and examine the patient and do any on-site management that is needed.

R1y covers Transplant and Vascular inpatients and consults (ED and Inpatient)

- Transplant
 1. Cross cover for transplant is particularly challenging. Some residents have made a survival guide for covering those patients. Ask around for that guide. Some useful tips are listed below:
 - Call the attending for everything! – really everything!
 - If you have to admit a pre-transplant patient they require an H&P. An H&P template can be found using the "dot phrases" listed below. Have an out-going resident share the templates with you.
 - Kidney transplant= ".txtransplantkidney"
 - Liver transplant = "txtransplantliver"
 - Admission order set sets:
 - Kidney and pancreas transplants use "**Transplant Pancreas Pre-Op**" order set in addition to the **ADULT Patient Placement order set**.
 - Livers use "**Transplant Liver Pre-Op**" order set in addition to the **ADULT Patient Placement Order Set**
 - make sure any orders are "stat" also need an interval H&P if the transplant is a "go"

Update the ACS A and B lists. Print lists for morning sign-out. Provide detailed sign-out to the day team

Update Problem Lists for all admissions and consults

The night interns will assist each other as needed based on clinical volume and patient acuity

- Ask your senior for help when you don't know what to do. Remember if you need help call people in this order:
 1. Senior Resident
 2. Attending in-house
 3. SICU attending

R2 Nighttime Responsibilities (not all-inclusive):

- Respond to consults (ED) and traumas. All requests must be run by the ACS senior and/or attendings and require a one-hour response time with preliminary recommendations in the chart by 2 hours. All requests must be run by the ACS senior and/or attendings and require a one-hour response time with preliminary recommendations in the chart by 2 hours. This means staffing the consult immediately after seeing the patient (come to the OR, come to the floors-find the senior or attending!). Place Consult note to stop the timer. If patient is being admitted place orders (admission vs observation dependent on insurance status so contact ED case manager for correct status), notify floor interns, update problem list. If patient needs an operation place OR case request and consent.
- Assist floor team in the care of the ACS patients

R4 Nighttime Responsibilities

- Lead, organize and supervise the service including preparing the list and night management of patients
- Assist in the delegation of daily service duties such as surgeries and consult to the junior resident staff
- Serve as trauma captain in the management and decision making of the trauma patient
- Perform and instruct junior residents on how to perform bedside surgical procedures

NP Responsibilities

- Daily rounds on ACS patients (split list with interns)
- Responsible for SICU patients (discuss care with the SICU team)
- Sign-out patients to the Floor Interns at 3:30pm
- Perform and instruct R1s on procedures
- Provide trauma/consult coverage Wednesday 7-8:30am ad Friday 11:30-1pm
- ACS Tattoo Removal Clinic: Thursday afternoon once clinic is underway (anticipate September 2021)

Global Surgery Fellow

- May function as an ACS attending at times
- May cover traumas when needed
- May 1st assist when no other resident is available or if there is one of their required cases going to the OR
- Please page them if there is a particularly interesting case or if their help is needed.

Medical Students (ALL RESIDENTS TO REVIEW BELOW)

- The medical students are on service to learn how to be interns therefore you should help include them in your daily work. Show them how to write orders, find medications doses, work up acute problems that occur on the floor (Chest pain, shortness of breath, a-fib, etc.), and have them see traumas and consults (CALL THEM-Get the phone number or pager)
 - **Consults:** If the consult is not an extremely sick patient that is “crashing” the students should be given 15-20min to see the patient and perform an h&p. They should write up the h&p on paper to be used as a reference for presenting the patient to the attending as well as for helping write the past medical history and Review of systems portion of the note for epic. You should have the student formally present these consults to you then you need to go see the patient and review the history with the patient and perform your own physical exam. You should then make a plan and discuss the patient with the senior. The student should get a chance to present these patients to the attending.
 - **Daily notes:** students should start the rotation seeing 1-2 patients daily but by the time they are at the end of the rotation they should see 3-4pts daily. The students should examine the patients and write a soap note on paper to be used for the patient presentation. Please quickly look at their notes to make sure they are completing soap notes correctly. The resident must also see every patient that a student is seeing and the resident is responsible for the daily soap note in EPIC
 - **Operating Room:** Help the students get to the OR for cases. If you know a patient went to the OR you should make sure there is a student in the OR with that patient. There should not be operations performed without a student if there are students on service that day. The OR is a priority over seeing consults or any other daily activities
 - **Lectures:** students have lectures Friday at noon. Students should come Friday morning to help the team with gathering vitals and updating lists and should attend morning report at 06:30. Students are not expected to return to rounds on Friday afternoon. Students also occasionally have lectures on Monday and Tuesday afternoons at 4pm. They should tell you when they have lecture. Feel free to give the students a mini lecture on a topic that you feel knowledgeable on. The students really appreciate being taught.
 - **Evaluations:** every Friday morning it is expected that all residents and attendings will fill out evaluation forms for the students at morning report. The evaluations can be filled out Friday morning in morning report but they must be completed. If you worked with the same student the week prior you should comment on their improvement or lack thereof.

Documentation

Trauma H&P and Trauma Consult – see Trauma section

Progress Notes

- Found by clicking “Notes” and “New Note”. Type=Progress Note. In textbox .acsdailyprogressnote
 - Fill in the portion of the physical exam performed on the patient
 - Fill in the required information
 - It is ok to copy and paste the HPI portion from the note the day before as long as you make sure the HPI section is correct
 - Assessments and plans should be listed by problem with the plan underneath **AND UPDATED (check orders to confirm that medications listed and nursing communications listed are still correct)**, for example:
 - **# Acute pain due to trauma** – improving overnight
 - Increase Roxicodeone to 10mg PO Q4
 - Start robaxin 100mg PO TID
 - Continue IV dilaudid for breakthrough pain
 - Make sure to address DVT prophylaxis and any invasive lines or catheters daily
 - All patients need DVT prophylaxis unless there is a risk of active bleeding. If you do not have DVT prophylaxis you must document why not. General Surgery patients lovenox 40mg SQ and Trauma patients 30mg SQ BID
 - All patients should have invasive lines and catheters removed as soon as possible. If a line or catheter cannot be removed, document the reason for its continued use.
 - Put all diagnoses from the assessment and plan in the EPIC problem list

ACS Consults

- Consult note is found by clicking “Create in NoteWriter,” type in **Consult** in the search box, choose **Acute Care Surgery Consult Template**.
- Follow the instructions imbedded within the note written in green, delete prior to signing.
- Do not delete the boxes at the top of the template that contain the communication times. Please accurately fill this section out.
- Consults must contain:
 - 4 of the 7 dimensions in the HPI
 - 10 systems in the review of systems
 - A complete Past Medical history, Surgical History, Social history, Family History, Medications, and allergies.
 - Go back and talk to the patient if you are missing a section. If it cannot be obtained due to intubation or low GCS etc. please state why it cannot be obtained.
 - Do not leave anything that states “not on file” within the note
- Put all the diagnoses from the assessment and plan in the EPIC problem list
- Update the “refresh SmartText” button prior to signing
- If a patient will be admitted you should copy and paste the consult note into an H&P and change the title within the note to read “ACS History and Physical”
- A consult note is only required the first time you see a consult. Any additional notes for this hospital stay should be progress notes. Make sure to check to see if ACS has seen the patient this hospital stay so you do not waste time with a full consult note

ACS H&P

- If a patient is being directly admitted or is a transfer patient and needs an H&P, or you are certain at the time of consult that you will admit you may use the ACS H&P note in place of a consult note.
 - If you are using this in place of a consult note from the ED, this note will not stop the timer therefore you will need to place a note that states “see h&p and the date and time you completed the H&P).
- The ACS H&P note is found by clicking “**Create in NoteWriter,**” type in **H&P** in the search box, choose **Acute Care Surgery H&P Template**.
- Follow the instructions imbedded within the note written in green, delete prior to signing.
- H&Ps must contain:
 - 4 of the 7 dimensions in the HPI
 - 10 systems in the review of systems
 - A complete Past Medical history, Surgical History, Social history, Family History, Medications, and allergies.
 - Go back and talk to the patient if you are missing a section. If it cannot be obtained due to intubation or low GCS etc. please state why it cannot be obtained.
 - Do not leave anything that states “not on file” within the note
- Put all the diagnosis from the assessment and plan in the EPIC problem list
- Update the “refresh SmartText” button prior to signing

Interval H&P

- Click on surgical navigator tab then click on “Update H&P” in the left column. Identify the ACS H&P from the list of H&Ps then click the “add interval” button on the right of that H&P
- If the Attending has not signed the H&P yet, copy and paste the H&P into a new progress note. The progress note does not require a cosigner. Go back to the surgical navigator and click on “update H&P.” Then click the add “interval H&P button”
- Follow the drop down menus and complete the required fields as appropriate for the patient.

ACS Clinic Notes

- Click on “New Note” and in the note “.acsclinicprogressnote”
- For postoperative patients under the global billing period (usually 30 days postop) can be a succinct note

Procedure Notes

- A procedure note should be placed in the chart and sent to the supervising attending for any bedside procedure including: central lines, chest tubes, laceration repairs, wound debridements, wound vac changes, trach changes, feeding tube changes, etc.
- Procedure notes should be placed using “**Create in Note Writer**” then select “**Procedure**” then select “**IP Bedside Procedure Note**”.
- Ensure the Authorizing provider is the appropriate attending
- Chose a procedure from the list. (click on the “**More**” button for other options)
- If the procedure is not listed as a pre-made option chose “**Other Bedside Procedure.**” Change the procedure title from Other Bedside Procedure to the procedure you performed.
- In the comments section at the bottom you should provide the following information:
 - Brief description of the Findings
 - A detailed description of the procedure (this should actually describe the procedure like an operative report. Do not write “chest tube was placed in standard fashion”)
 - Any complications
 - Estimated blood loss
 - Drains/packs

General Tips for Documentation

- Use the proper medical terminology for the diagnosis (hypokalemia instead of low K)
- Do not use the word “possible,” instead use suspected or likely
- Its ok to write in sentences or a paragraph if something is complicated and requires a better explanation than a one line statement
- Your assessment and plan should be thorough and up to date for that day’s problems. You should be able to read just the assessment and plan and get a very good understanding of what is happening with the patient and what the plan is.
 - Do not keep using copy and paste to carry forward old information such as ortho recommendations for a fracture or neurosurgeries recommendations for a head bleed. It’s ok to re-state it the day you read the note but there’s no need for any further mention.
- For each of the problems listed in the assessment state if they are improving, stable, or worsening.
- Ensure that each problem listed in the note is also listed in the problem list in EPIC.
- If the problem is no longer an issue state that it has resolved. The next day do not keep it in your note. All resolved problems should be moved to the HPI section where you have the summary of the hospital course and to the discharge summary. You should also resolve the problem in the problem list in EPIC.

CDI Clarifications

- The hospital employs nurses trained in documentation to read notes and ask questions on diagnosis that seem to be in the chart but not supported with the documentation. These questions will pop up upon entering a patient’s chart.
 - You **MUST** answer these by changing the documentation in your progress note from that day.
 - Do not click accept unless you are going to change the note.
 - If you don’t understand a CDI question ask the senior
 - There is a CDI tab under the Notes section in EPIC where you can see the CDI questions if you accidentally forgot to change the documentation at the time you pressed accept.
 - If you press accept it makes the question disappear for 48hours but no one else can see it so it may not get answered.
 - The hospital tracks how frequently each service responds to the CDI queries. They start paging your attending if it does not get answered rightaway.
- The following is a list of recommended terms to use in documentation. Please read this and use these terms.

General Surgery CDI TIPS

- Note all known “present on admission” diagnoses in the H&P or pre-op note/Consult
- A Valid Secondary Diagnosis is one which is being monitored, evaluated, treated, utilizes resources, prolongs the expected stay, or requires diagnostic procedures

Common Documentation Needs for ICD-10

- Acute diagnosis, Chronic diagnosis
- Acute on Chronic = exacerbated, decompensated
- Which side is affected: Left or Right?
- Which side is ‘dominant’? (if appropriate)
- Initial evaluation/ treatment
- Subsequent evaluation/ treatment
- Sequelae of event

History and Physical / Consultation Tips

Note in: **HPI:** Acute diagnoses, any Chronic diagnoses that are now decompensated, (which = 'Acute on Chronic') Do not use "MultiOrgan System Failure" or MODS—name individual organ failures "failure" and "insufficiency/distress" are not the same thing. Do not use "Global Developmental Delays" Identify location, timing, modifying factors, etc.

Chronic Ongoing Medical Problems (COMP): such as, Malnutrition, Diabetes, HTN, CKD, CF, IBD, ChrRespFail, Heart Failure (specify systolic/diastolic when known), etc. These are diagnoses that you are going to treat/ monitor while inpatient and they may change how you treat the patient— they contribute to severity of illness and Complexity of Medical Decision making (CoMD). When listed as COMP, if they remain stable throughout stay, they don't have to be mentioned again until the D/C Summary

Link home medications with the Chronic Ongoing Medical Problem for which it is taken Do NOT put these in your PMH

PMH: Diagnoses that are over and done with, may contribute to CoMD, but are NOT Chronic Ongoing Medical Problems

ROS: This is not intended to be a restatement of HPI issues—system by system, note pertinent positives and negatives

Assessment or Impression: However you choose to organize this section, make sure that you include DIAGNOSES, not just data such as labs, imaging studies, vitals, etc.

• **If uncertain of dx, but treating like that diagnosis is present: For Inpatients use one of the following: Presumed, Probable, Likely, Suspected; then diagnosis. For Outpatients/OBS: use symptoms you are evaluating**

Plan: This does not have to list dx, but if you do include them, put them with the plan that is dealing with that dx.

Discharge Summary Tips

- List all diagnoses that were treated, evaluated, monitored, increased LOS, or used resources = valid secondary dx
- Include all dx from MICU, SICU, when discharged
- Note Acute problems "improved" or "resolved"
- Note Acute problems which have become Chronic
- Note *Treated* uncertain diagnoses with use of "Probable", etc.
- Avoid symptom dx when specific diagnoses are known

Non-Compliance

Note if patient has been noncompliant of: Diet, Medication under dosing that is intentional/ unintentional, for financial or age related issue, related to renal dialysis, other medical tx

Hypertension

- It is important to differentiate primary HTN conditions from secondary HTN; when secondary, note the diagnosis that is the cause, such as CKD, DM nephropathy, Pheo, PCOS, Neuroblastoma, OSA, Coarctation, etc.
- It is as important to note the effects of HTN, such as stroke or cardiomyopathy, as it is to note the HTN itself
- Do not use diagnosis of HTN with transient elevation of BP, such as due to caffeine use, stress, anxiety, etc.

Malnutrition

- Identify as “Malnutrition” not FTT, underweight, thin, frail, undernourished, emaciated, cachectic appearing, etc.
- Note cause if known
- **Stage** malnutrition by % baseline weight lost per time
 - **Mild** (<1% in a week, <4% in a month, <6% in 3 months)
 - **Moderate** (1-2% in a wk, 4-5% in a mo, 6-7.5% in 3 mo)
 - **Severe** (>2% in a wk, >5% in a mo, >7.5% in 3 mo, BMI<16)
- Use dietician consult if present—get one if needed!
- Note Acute Malnutrition in: sepsis, trauma, complex surgery
- Stage acute malnutrition by clinical criteria:
 - moderate or severe

Obesity/Morbid Obesity

- Note Dx **and** BMI, if known
- Obesity = BMI \geq 30 and <40
- Morbid obesity - BMI \geq 40
- Note cause (i.e. nutrition, drugs, thyroid disorder)

Diabetes

- Identify Type 1 or Type 2 or secondary
- Name secondary cause such as CF, steroid-related, postpancreatectomy, pituitary/ adrenal tumors, etc.
- Note if controlled or uncontrolled (HbA1C>8)
- Name any complications of DM, i.e. ‘-opathies’
- Note **Hyperglycemia** or **Hypoglycemia** that is not DM and note the presumed cause

Acute Renal Failure/AKI— note the cause: Sepsis, hypoperfusion (due to hemorrhage, dehydration, DI, trauma, bypass, etc.), nephrotic syndrome— note pathology, Syndromes— Cardiorenal (note with Heart Failure and type), HUS, Hepato-renal, Pulmonary-renal, etc.

Chronic Kidney Disease (CKD)— **Stage** when known—**do not use CRI or CRF**—

- Note what disease is the cause: obstructive uropathy, reflux, aplasia/hypoplasia/dysplasia, polycystic dz, Alport Syndrome, glomerulonephritis, etc.
- Note sequelae: HTN, SHPT, etc.

Developmental Delays

- Identify individual delays-sensory, motor, mixed, language
- Intellectual Disability-note mild, moderate, severe, profound

Anemia— “Hgb = x” is not a diagnosis

Acute — note when due to blood loss

- Specify when expected d/t procedure, injury, etc., or d/t trauma, gross hematuria, blood drawing, etc.

Chronic— note when due to blood loss

- Anemia due to chemotherapy (treatment)
- Anemia of neoplastic disease (tumor)
- Anemia of CKD (ESRD)
- Anemia of other chronic disease. Note other specific disease: such as Sickle Cell, Hepatitis, SLE, note specific blood destroying disorder— ABO, etc.

Psych/ Social Issues

- **Abuse:** If suspicious, note whether physical or psychological
- **Chronic Somatic Pain:** d/t? stress, anxiety, depression, etc.
- **Suicidal/ Homicidal Ideation:** note thoughts or planning
- **Drug Abuse— Note specific drug abused**
 - Identify any physical or mental effect related to drug abuse or withdrawal
 - Note if continuous, episodic, or in remission
 - Do not use “abuse of multiple substances” or similar language— be specific which drug

Depression

- Note if single or recurrent episode and
- Note mild, moderate, severe and with/ without psychotic features or anxiety

Schizophrenia/ Bipolar Disorder

- SD—Note cause, and if acute, paranoid, schizoaffective, reactive, chronic, latent or borderline
- BD—Note if psychosis and specify mild, moderate, severe

Anorexia/ Bulimia

- Note Nervosa—binge type or purging type
- Note if Malnutrition present—stage mild, moderate, severe

Infectious States

SEPSIS – note “DUE TO” ...

- Pneumonia, Cellulitis, Osteo, trauma, meningitis, UTI, meningococemia, immunocompromised pt (d/t), etc.
- **State the organism if known**; if *uncertain of dx*, but treating like that organism is present: For *Inpatients* use one of the following: Presumed, Probable, Likely, Suspected; then diagnosis

Positive blood culture is NOT required—treatment is!

- Specify if the source is an infected device or catheter
- Do not use “Urosepsis”—state “Sepsis d/t UTI with _____”
- Do not use “Sepsis-like Syndrome” or similar— if you are going to treat like it is Sepsis, call it Sepsis— see above
- Use “Bloodstream Infection with _____” **not** “Bacteremia”
- *Bacteremia* alone is a lab result with no severity— be specific
- Note “fever in an immunocompromised host” d/t chemo, etc.
- *SIRS is the same clinical picture, but not infection related*

Post-Surgical Conditions

- **Do NOT use the words, “post-operative” unless to indicate which day it is following surgery.** This term allows a complication code to be assigned to the surgeon without further clarification by the surgeon. If there is a complication in a case, the surgeon should be the one to determine if that is so!
- Be aware that the “complications” section of your operative note may be coded as such. Occurrences which are not complications should be noted under “findings” and circumstances which made the case more difficult to perform should also be noted under “findings”

Anemia

- Is it a valid secondary diagnosis?
- Note when it is due to Acute blood loss
- Categorize it, when it occurs, as an **expected** outcome of the surgery or injury/ disease OR as a **complication**
- Note when it was POA/ present before surgery, and the cause, if known
- Note if there is a chronic anemia and what it is due to

Atelectasis—Is it a valid secondary diagnosis? Was it present on admission? Is it a true complication?

Urinary Retention/ Malnutrition— Same as above

Ileus: Use this term when bowel recovery has **not** occurred within the expected timeframe and requires additional efforts, which makes it a valid secondary diagnosis. Is it a complication? Was it POA?

Acute Respiratory Failure—If ARF was not POA, note in the post-operative period if d/t the surgery, is ‘expected’ or a ‘complication’, and/or if Chronic Respiratory Failure is present, such as might be d/t COPD, CLD d/t BPD, CF, etc. **Don’t call it Acute Resp Failure (or let anyone else call it that) if the patient has a pre-existing condition which requires ‘prolonged ventilator management’,** i.e. COPD, Chronic Resp Failure, some transplant patients, or airway protection, and does not meet criteria for Acute Resp Failure— It may be called a “complication”

Hypovolemia—caused by dehydration or blood loss? Valid secondary dx? Shock present? (Hypovolemic or Hemorrhagic)

Surgical Conditions – for OP Reports/procedure notes

The Surgeon must be aware of all risk factors that add to the potential of an adverse outcome and must take into account all co-morbid conditions.” Include these in your surgical notes at least once—it says you are aware

Gallbladder/ Bile Duct Issues—Note w/wo calculus, w/wo obstruction, w/wo cholecystitis/ cholangitis (acute/ chronic?)

Pancreas Issues—Note pancreatitis (acute/chronic), due to, pseudocyst (acute/chronic), failed medical management, etc.

Hernia repair—Note location/name, laterality, w/wo obstruction, w/wo gangrene

Appendicitis—Note Acute or Chronic, generalized or localized peritonitis, w/wo perforation, w/wo abscess

Abdominal Pain—Note Acute/ tenderness/ rebound/ rigidity, —quadrant, epigastric, periumbilical

Skin wounds surgically treated— Note location, laterality,

- Present on Admission? size, depth, assoc. infection, etc.
- If Pressure Ulcer, note stage, if stageable

Lysis of Adhesions— Usually considered “part” of procedure;

To document additional efforts of adhesiolysis: Note Obstruction present or not d/t adhesions, Note when adhesions are the cause of pain or dysfunction, Note when they prevent the surgeon from access to area of intended surgery, Note when they require lysis before operation can proceed, State extended amount of OR time required

Excisional Debridement

Important: The procedure note must include each of these:

- Removal of devitalized tissue by sharp dissection
- The instrument used: scalpel, scissors, etc.
- Excision to “viable margins”
- Note the lesion’s dimensions
- Note the deepest layer of tissue which was removed

If this was done in the ER, OR, bedside, etc. and the above information is not in the note, a “non-excisional” debridement will be what is coded— don’t let this happen!

Bowel Resection— Name the location and the disease process that made the procedure necessary:

Obstruction, Volvulus, Abscess, Intussusception (what into what?), Fistula, Acute Vascular Insufficiency, Perforation, IBD, Congenital functional disorders, etc.

- Note specific part of bowel removed

GI Bleeding— Note hematemesis, hematochezia, melena “Rectal Bleeding” indicates a lesion in the rectum is bleeding. After study, indicate specifically what is the source of bleeding, if found, and link to anemia, if present, and state if felt to be an acute or chronic blood loss issue.

Trauma Documentation

Note: Specific anatomic location of injury: Laterality and Dominant side, when applicable, Severity of injury, With or without LOC, With or without hemorrhage, With or perforation, Traumatic vs. non-traumatic, Open vs. closed wound, Displaced vs. non-displaced, Associated injuries to other body parts (i.e. nerves, blood vessels, muscles, tendons), Extent of injury

Fractures

- Open vs. closed; Gustilo classification for open fractures

- Location and Laterality, Displaced vs. non-displaced

Laceration/contusions of internal organs, Length/size of laceration

Brain Injury

- Traumatic, Laterality, Location (subarachnoid/ intracerebral/ subdural/ epideral), Acute vs. subacute vs. chronic

- Concussion, With or without LOC, Duration of loss of consciousness

Burns

Depth (first, second, third degree), Extent: % of total body surface area, Agent (heat, electricity, chemical, radiation)

Shock— Type of shock—hemorrhagic, hypovolemic, cardiogenic, septic/SIRS

Spinal cord injury

Location injured, mechanism of injury, Type of injury (i.e. central or anterior cord syndrome, concussion and edema, transection), Level of injury and degree (partial transection, complete)

Malignant Neoplasm

- Specific type, specific site
- Primary or metastatic
- Laterality, if appropriate
- Note if under treatment, post-resection/ chemo/ radiation, metastases and location of mets (be as specific as to site as possible)

**** Pathology reports cannot be used to code the specifics of any disease. The SURGEON/ attending must note these in order for severity to be captured. A “mass” that is resected is not malignant until the SURGEON states so. If not known at the time of the discharge summary, an addendum done after the d/c summary has been completed is required for complete and accurate documentation to provide appropriate Mortality/Complication/LOS metrics.

Breast Disease

Note: Laterality, Dysplasia, Cystic Disease— solitary/ diffuse, Fibroadenosis, Mammary duct ectasia, Inflammatory Disease, Abscess (location), Mastitis (acute/ subacute, Gynecomastia

- Other disorders: Fissure/ fistula of nipple, atrophy, ptosis, hypoplasia, Mastodynia, Galactorrhea
 - It is important to differentiate primary HTN conditions from secondary HTN; when secondary, note the diagnosis that is the cause, such as CKD, DM nephropathy, Pheo, PCOS, Neuroblastoma, OSA, Coarctation, etc.
 - It is as important to note the effects of HTN, such as stroke or cardiomyopathy, as it is to note the HTN itself
 - Do not use diagnosis of HTN with transient elevation of BP, such as due to caffeine use, stress, anxiety, etc

Chronic Ongoing Medical Problems (COMP): such as, Malnutrition, Diabetes, HTN, CKD, CF, IBD, ChrRespFail, Heart Failure (specify systolic/diastolic when known), etc. These are diagnoses that you are going to treat/ monitor while inpatient and they may change how you treat the patient— they contribute to severity of illness and Complexity of Medical Decision making (CoMD). When listed as COMP, if they remain stable throughout stay, they don't have to be mentioned again until the D/C Summary

Link home medications with the Chronic Ongoing Medical Problem for which it is taken Do NOT put these in your PMH

PMH: Diagnoses that are over and done with, may contribute to CoMD, but are NOT Chronic Ongoing Medical Problems

ROS: This is not intended to be a restatement of HPI issues—system by system, note pertinent positives and negatives

Assessment or Impression: However you choose to organize this section, make sure that you include DIAGNOSES, not just data such as labs, imaging studies, vitals, etc.

• **If uncertain of dx, but treating like that diagnosis is present: For Inpatients use one of the following: Presumed, Probable, Likely, Suspected; then diagnosis. For Outpatients/OBS:** use symptoms you are evaluating

Plan: This does not have to list dx, but if you do include them, put them with the plan that is dealing with that dx.

Discharge Summary Tips

- List **all** diagnoses that were treated, evaluated, monitored, increased LOS, or used resources = valid secondary dx
- Include all dx from MICU, SICU, when discharged
- Note Acute problems “improved” or “resolved”
- Note Acute problems which have become Chronic
- Note *Treated* uncertain diagnoses with use of “Probable”, etc

Discharges

Prior to Discharge:

- If your patient is close to discharge (or even at the time of admit) these are the things you should address:
 - Placement – home, SNF, Rehab, shelter etc.
 - Get case management involved
 - Do they need special equipment? – check last PT note for walkers, crutches, shower chairs etc. These are ordered as “Durable medical equipment” under the “Med Rec” tab for discharge.
 - Do they need home IV antibiotics, TPN, tube feeds, home health, wound vac ?
Address these needs as soon as you suspect the patient may need them as it often takes several days to arrange.
 - Involve social work if bus fair or shelter placement is needed
- Ensure a principal problem is checked in the EPIC problem list and that all active problems are listed

For all discharge orders, click on the “DC to Home or Outside Facility” tab on the left side of your EPIC screen. You will need to complete the following sections:

Med Rec/Orders (prescriptions and all new orders)

- Tell patients to fill their prescriptions at the pharmacy downstairs so you know right away if their insurance doesn't cover something that was ordered.
- **Review Orders for Discharge** – choose medications to send home with the patient and click “prescribe” or “don't prescribe”
- Make sure to choose “print” – when you sign all the discharge info the prescriptions will print at the patient's unit printer.
- **New orders** – place orders for misc supplies, durable medical equipment, ambulatory referrals for consulting services that require follow-up by finding the order in the “Additional Discharge Orders” section. Also choose the patient's disposition and discharge date and time.
- **Review and Sign** – double check that all orders are correct and click sign.

Discharge Summary:

- Make sure attending listed at the top of epic is the attending that is on call the day of discharge and make sure the attending listed within the note as the discharge attending is accurate as well.
 - To change the attending on EPIC go to orders and type in “update Service/Provider Team”. I suggest changing the attending on all primary patients on your list every Monday to ensure the attending is correct for the discharge summaries for the remainder of the week.
- **Avoid symptom dx when specific diagnoses are known**
- Ensure all the diagnosed injuries as well as any other medical problems the patient had during their stay in the hospital are listed in the problem list then refresh the smartlinks by clicking the “refresh smartlink” symbol
- Double check that the admit, discharge, and conversion to admit dates are accurate and filled in within the discharge summary as these often get changed as the note is shared.
- Hospital Course section
 - Make sure it is detailed and describes the complete hospital course.
 - Do not simply list the injuries and say the patient was stable for discharge when they have been in the hospital for a week. What happened during the week? What kept the patient in the hospital those days? The person in clinic must be able to understand everything that happened in the hospital from the discharge summary. Narrate the hospital stay as if you are telling someone a story.
 - State the reason for return to ACS clinic and when they should be seen in ACS clinic (ie. Suture removal from leg laceration, staple removal from scalp laceration, post-op check from ex-lap with splenectomy)

- State the diet for home
- State the activity level for home

Follow-Up Providers:

- Make sure there are referrals to all the consulting services such as ortho, ENT, plastics, Ophtho, etc. by typing in the name of the attending in the Follow-up providers section.

Patient Instructions:

- Include discharge instructions and patient education for the listed injuries
- You can steal the "dot phrase" from Dr. O'Bosky titled ".KODCINFO" to use for post-op patients

Letters:

- Patient often need letters for return to work, work excuses, excuses for PE, etc.
- If unsure about timing to return to work ask your senior
- For all patient's who are post-op they should have at least a light duty note for work that says "no heavy lifting x four weeks"

How to Admit a Patient From the ED

- Complete and H&P note
- Put all the diagnosis from the H&P in the EPIC problem list tab
- Verify if patient should be full admission or observation with your senior/attending and ED social worker
- Click on "**Admit or OP Obs**" from the left hand column then click "**MedRec/Orders**"
 - Review current orders – continue or discontinue the orders from the ED
 - Review the home medications – click on when the patient took the last doses
 - Reconcile home medications- order or chose not to order medications from home
 - Restart from previous admission – chose to re-order applicable orders
 - New orders- you always have to choose the **ADULT Patient Placement Orders** but will also need to choose one of the **ACS order sets** (they can be found by typing ACS in the order sets and pathways box)
 - Make sure to complete the hospital completion box embedded within the placement order.
 - Choose observation or admission – your senior should help you chose which patients should be observed verses admitted. Make sure to choose the correct observation or admission order based on the location of the patient.
 - Enter any additional orders that are not covered by the Adult patient placement orders or the ACS order set.
 - Review and sign – pay attention to any orders with red exclamation points and complete those orders. Then sign the orders.
 - If a box pops up for phase of care click the phase of care that the admission orders most accurately represent.

How to Admit a Patient From the OR

- Click on “**Surgical Navigator**” from the left hand column then click “**Post-Op Admit or Transfer**” then click on “**Med Rec/Orders**”
 - Review current orders – continue or discontinue the orders from the ED
 - Reconcile home medications- order or chose not to order medications from home
 - New orders- you always have to choose the **ADULT Patient Placement Orders** but will also need to choose one of the **ACS order sets** if the patient has not been admitted pre-op (they can be found by typing ACS in the order sets and pathways box). If they have already been admitted you can continue all the previously written orders as long as they still apply to the patient.
 - Make sure to complete the hospital completion box embedded within the placement order.
 - Choose and admission or observation order if the patient has not had initial placement orders previously and went to the OR from the ED or home.
 - Choose transfer if the patient came from the floor and already had initial placement orders.
 - Enter any additional orders that are not covered by the Adult patient placement orders or the ACS order set.
 - Review and sign – pay attention to any orders with red exclamation points and complete those orders. Then sign the orders.
 - If a box pops up for phase of care click the phase of care that the admission orders most accurately represent.

How to Get a Patient to the OR

Required Items:

- **H&P** (see H&P section) There must be a progress note or H&P from the date of surgery in the chart for if you are updating an H&P from a few days ago you need to write a progress note for that day.
-
- **Interval H&P** (see interval H&P section)
- **OR Case Request** – tips below
 - Choose add- on from the priority menu if the case is an add on
 - Make sure to enter a date – if you do not put today’s date for an add-on case the case request disappears and the OR cannot find it. You will have to put in an additional case request.
 - Patient class
 - Post- Op Admit to Inpatient = patient from ED who will be admitted after OR
 - Outpatient = observation
 - Inpatient the patient is already admitted
 - Case Classification – ask the senior what class to book the patient under
 - For patients that do not need to go in the next 24 hours you should choose “scheduled case” and put today’s date in the date field at the top of the order set.
 - If you are booking for a specific date choose scheduled and put the appropriate date in the date field at the top of the note.
 - Special needs – as the senior if there are any specific instruments or equipment needed. Don’t forget the type of table and position of the patient (ie: lithotomy or prone - default is supine)
 - Fill in comments and scheduling instructions as instructed by your senior.
- **Consent** – see consent section

- **Site marked** – any case that has laterality such as an extremity must be marked. Ask the patient to mark the location of the procedure (if they are able to do so) with a marker provided in the OR. Sign your initials on the site to be operated on.
- Don't forget to make the patient NPO and start fluids if needed the night before for planned cases.

Consents

New electronic consents will be available on EPIC. Pay attention to training provided for these consents

General Rules for Paper Consents if needed:

- Both a duplicate, bi-fold, **Procedure Consent** form and a single page, white, **Informed Consent** form are required
- The procedure must match verbatim on both forms
- You may not cross out any part of the procedure title on the forms
- If the patient has already signed the consent and you need to add a procedure to the consent both you, the patient, and a witness must initial, date and time next to the addition.
- **Procedure Consent**
 - The admitting physician is the physician on epic that is caring for the patient. The Surgeon is the name of the surgeon performing the surgery. Often there may be multiple surgeons or you are not sure who will do the case. You should always write out the names of all the ACS surgeons: (i.e.: Turay, O'Bosky, Mohr, Mukherjee, Catalano, Srikureja, Quigley etc). Patient signature must be witnessed by a hospital employee in a clinical position (RN, LVN, PCA, MA, or Secretary).
 - If you need to do a phone consent you will need **two nurses** to confirm the procedure with the person giving consent.
 - If a patient does not speak English you must use a certified interpreter (a person with a "world" sticker on their badge, and official interpreter from the hospital, or a language line interpreter). Make sure to get the interpreter's name and ID number if they have one.
- **Informed Consent**
 - This consent must have the risks of the procedure written in the space provided.
 - Always include the basic risks of surgery : bleeding, infection, damage to surrounding structures, need for further procedures, pain, scar, risks of anesthesia including cardiopulmonary failure, blood clot, stroke, and death
 - Include any specific risks for that procedure. (ask your senior for help with the specific risks)
 - The blood consent should be completed on the back of the Informed consent
- **Emergency Consent**
 - Located on the back of the Informed Consent
 - Do NOT need two physicians – only **one** licensed physician is required to sign the form
 - Make sure to put blood transfusion in the emergency consent

SICU

Sicu is a closed Unit

- There must be an ACS note for every SICU patient every day
- ACS is the primary team and should be the main decision makers for overall care decisions such as OR, IR, CT scans etc however the SICU team will manage the vent and other critical care issue
- **DO NOT WRITE ORDERS ON SICU PATIENTS!!!** All orders must go through the SICU team. It is ok if you discuss the plan with sicu and they ask you to place a specific order such as a CT scan or IR order but do not write orders they have not asked you to write.
- The SICU resident on call has pager # 8111
- The ICU main phone number is 44381

Transfer into the SICU:

- Call the ICU and give the SICU resident a verbal sign out. The ICU will not take a patient until the sign out has been completed.
- Place a "level of care" order and change the level of care to ICU
- Call patient placement at 87511 to notify them that you have placed the orders and that the patient needs an ICU bed.
- Fill out a SBAR note. The SBAR note can be found by typing "SBAR" in the "insert smart text" box and choosing **CCC SBAR admission to ICU** note.

Transfer out of the ICU

- You may be asked to transfer a patient out of the ICU.
- Ask your senior if it is ok to write the transfer orders for the patient as there may be a reason you are not aware of that the patient cannot leave the ICU. If the SICU attending is an ACS attending there is no need to ask your senior but you will need to inform the senior of the move.
- You will need to write a level of care order to intermediate care and change vitals, neurovascular checks, and neuro checks from Q1 hour to Q2 hours.
- The ICU should write the SBAR note

Trauma

The response to trauma consists of the trauma team (ACS attending, senior, junior, and medical student), ER attending and ER resident, Trauma Nurse (aka scribe), a procedure nurse, a medication nurse, a respiratory therapist and an ER tech. A level A response will bring the blood bank as well.

- When you arrive in the trauma bay show your badge to the trauma Nurse and tell them your role (trauma captain, trauma junior...). This way your presence will be recorded.
- The role of the Trauma Junior is to perform the primary and secondary surveys and to communicate the exam to the senior and the scribe. You may also be asked to perform procedures with supervision.
- The ACS senior is responsible for managing the trauma under the guidance of the ACS attending using ATLS principals and is called the Trauma Captain.
- Assign the roles of Trauma Captain and Trauma Junior prior to patient arrival. The ED resident can also perform at Captain or Junior and the ACS resident performs the FAST exam. There are enough procedures and will be assigned to residents by the ACS and ED attending according to clinical needs and urgency.
- If there are multiple trauma activations at one time ask your senior where you will be most effective.
- **From the time the trauma team arrives at a trauma you should care for the patient as if it is your patient. This means you are responsible for putting orders in, cleaning wounds (unless the ED specifically states they will handle it), and watching that the patient remains stable. This means that you are continually checking on these patients. You do not forget them once you have written orders and leave the ED! SICU admissions while still in the ED are the ACS teams responsibility. You may call the SICU for assistance in patient management but they are your patient until physically in the SICU.**
- A resident must accompany all Level A and B traumas to the CT scanner
- A member of the trauma team must be present at all times with a trauma patient that has gone to IR.
- **Stoplight:**
 - A protected 60-90 seconds of time that the EMS providers have to give an un-interrupted sign-out to the entire ED team
 - During the sign-out you should be listening, not trying to assess the patient.
 - If the patient is receiving CPR as they are brought in an expedited sign out should be given and decision made for whether or not a thoracotomy is going to be performed.
- **Personal Protective Equipment (PPEs):**
 - This includes a hair net, mask with face shield, gown, and gloves. Shoe covers optional.
 - If an OSHA site visitor sees you without PPEs you can personally be fined \$40,000 and the hospital will also be fined \$40,000.
- **Primary Survey:**
 - The purpose is to identify life threatening injuries immediately.
 - It consists of evaluating the ABCs.
 - Should take very little time <60 seconds
 - **Airway:** the easiest way to assess the airway is to ask the patient for their name. If they can reply the airway is clear and they are following commands. The ED physicians will manage the airway but you should quickly look to identify things that may compromise the airway such as an expanding neck hematoma, obvious facial fractures/severe facial trauma, GCS of 8 or less
 - **Breathing:** you should assess for bilateral breath sounds (or lack thereof), midline trachea, palpate the chest looking for crepitus or obvious chest wall deformities. The goal is to identify tension pneumothorax, massive hemothorax, open pneumothorax and flail chest.
 - **Circulation:** you should listen to the heart for heart sounds, identify palpable peripheral pulse. The goal is not to assess every artery, but to identify if the patient has a perfusing blood pressure.

- **Disability:** you should assess the patient's GCS (if you don't know the GCS scale you should memorize it now), examine the pupils for size, and reactivity, identify that the patient has moved all extremities or not (wiggle your fingers, wiggle your toes)
 - **Exposure/Environment:** help cut off the patient's clothes to expose the entire patient. You don't want to miss a life threatening injury because it is hidden under the patient's clothes. This means cutting off underwear as well. This should be followed by placing warm blankets on the patient.
 - **Secondary Survey:**
 - You should begin your secondary survey immediately after you finish the primary survey.
 - A head to toe examination of the patient identifying all injuries (even the small scratches) and obtaining a history and review of systems.
 - Call out all injuries that you identify along with estimated sizes.
 - **Head:** Examine the entire scalp and head looking for lacerations, hematomas, fractures. Examine the eyes looking at the pupils and conjunctiva for injuries, ask about visual acuity, and examine extra-ocular movements. Palpate the bones on the face, palpate for mobile maxilla, palpate the mandible, ask if the teeth come together like normal. Perform a cranial nerve exam. Look into the ears with an otoscope to evaluate for hemotympanum.
 - **Neck:** palpate for hematomas, tenderness crepitus, laryngeal fractures, listen for carotid bruits, look for seat belt signs, lacerations on the neck and distended neck veins.
 - **Chest:** palpate the entire chest including the clavicles and note tenderness or fractured areas, look for open wounds, lacerations, hematomas, etc.
 - **Abdomen:** palpate the abdomen looking for tenderness and distention, look for abrasions, open wounds, lacerations, and seatbelt signs
 - **Pelvis:** palpate the pelvis over the iliac crests looking for instability (this should only be done once by one provider – it can cause more bleeding)
 - **Perineum:** look for open wounds, blood at the meatus, vaginal discharge (especially if pregnant). A manual vaginal exam should be performed in females with pelvic fractures to evaluate for vaginal lacerations
 - **Rectal:** a rectal exam should be performed looking for blood, rectal tone (baseline and voluntary tone) and high riding prostate.
 - **Extremities:** palpate the extremities looking for tenderness, and deformities. Look for any signs that there may be an open fracture. Have the patient bend the knees and elbows, check strength, sensation and reflexes. If there is an obvious arm injury make sure you do a thorough hand exam testing motor, dexterity, and sensation in the various dermatomes.
 - **History:** make sure to get your past medical history (medical/surgical/ family/social) and a complete review of systems. If these cannot be obtained you will need to document why. You can go back and obtain any information you initially missed after the initial chaos of the trauma dies down or after CT scan
 - Trauma patient imaging is determined by the Trauma Captain with the ACS and ED attending
 - All trauma patients need a trauma panel of labs drawn (CBC, CMP, lactate, Coags) - usually ordered by ED
 - All traumas need a Urine drug screen and serum ETOH
 - Not every trauma patient needs a new c-collar placed if the c-spine can potentially be cleared in the next 4-6 hours. (the collars are expensive)

Pediatric Trauma

- The full ACS service (attending, senior, 2nd year) responds to Peds Level A and B traumas only.
- The pediatric surgery resident should chief all peds level C traumas with the ACS senior resident and the senior is responsible for discussing those traumas directly with the Peds Surgery attending on call. Peds level C traumas should not be discussed with ACS attendings unless there is an urgent life threatening issue.
- **All PEDIATRIC TRAUMA DOCUMENTATION SHOULD BE COMPLETED BY PEDIATRIC SURGERY RESIDENT.** No documentation should be completed by the ACS service.
- Seniors: please remind the pediatric surgery residents that they need to send a consult note to the ACS attending for level A and B traumas and a separate H&P note to the Pediatric Surgery attending on call. This is the one place that copy and paste is acceptable.

Trauma H&P and Trauma Consult Documentation

- Create New Note. H&P or Consult Note Type (H&P for patients coming to the ACS service, Consults for Discharges from the ED or admissions to a different service). **Insert SmartText Adult Trauma H&P Template**
- **Read instructions written in green** in the note. Delete instructions prior to signing
- Time box:
 - Time called = when your pager went off. May put same time for all
 - Must have time attending arrived documented for all level A&B traumas – ask the trauma nurse in the room for times they arrived (if trauma is upgraded include as well)
- Make sure you have a chief complaint and at least 4 of the 7 dimensions listed for the chief complaint.
- Description of incident – the story given by EMS – ask the trauma nurse if you missed the details or were not there.
- Must fill in all Past Med Hx/Surg Hx/Fam Hx/Soc hx
 - Do not leave anything that says “not on file” (especially family history)
 - Go talk to patient after initial trauma eval and/or CT scan if info not obtained on arrival
 - If patient is intubated, has low GCS or otherwise unable to provide the information make sure to state so by selecting “unable to obtain due to ****” from the drop down menu.
- **ROS – must have 10 systems** (count them!). If unobtainable please state why. Click on ROS link at the top of the note or use .ROSadult
- Physical exam:
 - Please use the body diagram as part of the physical exam
 - Describe the size of lacerations/abrasions/wounds
 - Make sure you do not skip the strength exam, pulses and reflexes
 - Click on Adult Trauma Phys Exam Graphical Documentation at top of note to add additional exam findings
- Imaging
 - Refresh imaging reports by typing the DOT phrase “.imaging24hrs” once all CT and plain film reports have been completed
 - If there is outside imaging type out the impression from the report from the other hospital.
- Labs:
 - Refresh the links prior to signing by clicking the “Refresh all smartlinks” icon (green recycle-like symbol)
 - The ETOH and Tox screen may need to be updated by hand
 - Delete any smartlinks that do not have values once all labs are returned (ie. ABG)

- Yellow Box = Assessment, it's a list of diagnosis
- Tips for the yellow box:
 - Skin – All lacerations should be listed here (with lengths) Ok to say multiple abrasions if more than one abrasion
 - Neck =anterior soft tissue of neck not spine
 - Abd/pelvis – grade solid organ injuries, list pertinent positives such as free fluid or air, bowel edema, or seat belt signs
 - Ext/pelvis –Fractures should be classified as open or closed, displaced or non-displaced and the portion of the bone that is fractured should be listed (ie: open displaced mid-shaft femur fx)
 - Head/face
 - if the patient has loss of consciousness from hitting their head they have a concussion. Specify time of LOC <30min, 30min-1hr, or >1hr
 - Extra-axial hemorrhage = traumatic SDH
 - SAH, intraparenchymal injury, stroke or other named injury – specify time of LOC if they lost consciousness
 - List bones that are fractured in the face
 - Thorax- list ribs that are fractured ie: right 3-6 rib fx
 - Spine – list any tenderness, fractures, and state if a portion of the spine was cleared by the ACS service in the ED
 - Non-trauma Dx/Chronic ongoing medical problems - acute alcohol/drug intoxication, electrolyte abnormalities, acute respiratory failure, lactic acidosis, psych diagnosis, other medical problems you will manage in house
- Plan – list where the patient will be admitted and to which service, as well as consults, and any other specific plans

Spinal Clearance

- Spines can only be cleared by ACS, Ortho or Neurosurgery attendings, General Surgery residents PGY3 or above and Ortho residents that are PGY-2 or above, and ACS NPs
- Anyone can place patients in full spine precautions (but clear ASAP)
- You may also add comments to the bottom of spinal clearance orders to clarify for PT/OT to stand in a brace for upright x-rays.
- Every trauma patient must have spinal clearance orders written for on admit.

Trauma Admits

- Place patient on the EPIC list ASAP
- "Admit or OP Obs" tab on left of Epic screen -> "Med Rec/Orders" -> follow the next buttons -> Use adult patient placement orders **AND** ACS ICU or intermediate/Obs orders
- Do not put on bedrest
- Use resuscitative fluids (NS, LR) for first 24hours (do not give patients with a head bleed LR or isotonic fluid, only NS)
- Be cautious replacing K+ as most derangements are temporary due to intracellular shifts from acidosis and correct themselves. Replace if less than 3.2 but replace 20mEq less than you normally would.
- If ETOH or Tox screen is positive order BAIT consult
- All traumas need spinal precautions - Place all patients in **Full Spine Precautions** and tell the senior to clear whatever they can
- Neurovascular checks are only for limbs with injuries/fractures

Trauma Discharges

- Ensure Doe name is updated to the patient's real name prior to writing orders and scripts
- Tell patients to fill their prescriptions at the pharmacy downstairs so you know right away if their insurance doesn't cover something that was ordered.
- Ensure a principal problem is checked in the problem list
- Make sure there are referrals to all the consulting services requiring follow up
- Include discharge instructions and patient education for the listed injuries
 - Make sure to state the diet and consistency of diet
 - Make sure to state the weight bearing status and use of adaptive equipment.
- All trauma patients should see their primary care physician within 1 week of discharge.

Common Trauma Diagnosis

Splenic Injury

- Grade the injury
 - Grade I = subcapsular hematoma <10% surface area or laceration <1cm deep
 - Grade II = Subcapsular Hematoma 10-50% surface area or laceration <5cm deep
 - Grade III = Subcapsular hematoma >50% surface area or expanding, or ruptures, or parenchymal/intraparenchymal hematoma >5cm or expanding, or laceration >3cm deep involving trabecular vessels
 - Grade IV = laceration involving segmental or hilar vessels producing major devascularization (>25%)
 - Grade V = completely shattered spleen or hilar injury with devascularization
- Place in problem list on EPIC
- Orders to consider:
 - +/- ICU admission (ask senior)
 - Hold Lovenox until attending/Senior approved, make sure to order SCDs
 - Q6 CBC x 24hrs
- If there is active extravasation on CT, notify senior immediately and ask if IR should be consulted

Liver Injury

- Grade Injury
 - Grade I = subcapsular hematoma <10% surface area or laceration <1cm deep
 - Grade II = subcapsular hematoma 10-50% surface area or intraparenchymal <10cm in diameter or laceration 1-3cm deep and less than 10cm long
 - Grade III = subcapsular hematoma >50% or intraparenchymal >10cm or expanding or laceration >3cm deep
 - Grade IV = parenchymal disruption of 25-75% or 1-3 segments
 - Grade V = parenchymal disruption of >75% or >3 segments
 - Grade VI = hepatic avulsion
- Place in Problem List in EPIC
- Orders to Consider
 - +/- ICU admission (ask senior)
 - Hold Lovenox until attending/Senior approved, make sure to order SCDs
 - Q6 CBC x 24hrs
 - CMP daily
- If active extravasation is found on CT, notify senior immediately and ask if IR should be consulted.

Renal Injury

- Associated with both blunt and penetrating trauma
- Suspect if location of penetrating trauma is in the vicinity of the kidney or if there is gross hematuria
- Grade the Injury
 - Grade I = contusion with microscopic or gross hematuria and normal urologic studies, or nonexpanding subcapsular hematoma without parenchymal laceration
 - Grade II = nonexpanding hematoma confined to the renal retroperitoneum or laceration <1cm deep without urinary extravasation
 - Grade III = laceration <1cm deep without collecting system rupture or urinary extravasation
 - Grade IV = laceration extending through the renal cortex, medulla, and collecting system or main renal artery or vein injury with contained hemorrhage
 - Grade V = completely shattered kidney or avulsion of renal hilum which revascularizes the kidney
- Place in Problem List in EPIC
- Orders to Consider
 - +/- ICU admission (ask senior)

- Hold Lovenox until attending/Senior approved, make sure to order SCDs
 - Q6 CBC x 24hrs
- If active extravasation is found on CT, notify senior immediately and ask if IR should be consulted.
- Consider repeat CT scan - discuss with senior/attending
- Urology consult at the discretion of the attending

Urethral Injury

- Typically associated with straddle injuries, pelvic fractures, or penetrating pelvic trauma. Suspect if you have the following:
 - pelvic ring fracture
 - blood at meatus
 - scrotal or perineal hematoma
 - Inability to void
 - High riding prostate
- Workup – retrograde urethrogram, if positive for injury will need urology consult
- Do not take out/change the foley without urology's blessing

Pancreatic injury

- Rarely an isolated injury
- In blunt abdominal trauma its associated with chance fractures, handle bar mechanism, or injury to surrounding organs
- In penetrating trauma usually associated with spinal injury or injury to surrounding organs
- Grade the Lesion
 - Grade I = minor contusion without duct injury or superficial laceration without duct injury
 - Grade II = major contusion without duct injury or tissue loss or major laceration without duct injury or tissue loss
 - Grade III = Distal transection or parenchymal injury with duct injury
 - Grade IV = proximal transection or parynchmal injury involving the ampulla
 - Grade V = massive disruption of pancreatic head
- Place in Problem List in EPIC
- Orders to Consider
 - Q6 CBC x 24hrs, daily CMP, daily lipase
- Consider STAT MRCP to evaluate the duct if the injury is questionable
- OR vs non-operative management – discuss with attending

Bowel injury

- Bowel injuries are notoriously difficult to diagnose by imaging alone
- Suspect bowel injury in patients with:
 - penetrating injuries to the torso, buttocks and upper thighs
 - blunt trauma with:
 - seatbelt sign
 - free fluid present on CT without evidence of solid organ injury
 - hypotensive patient with free fluid on FAST
 - lumbar chance fractures, especially with free fluid on ct
 - anyone with worsening abdominal pain, worsening leukocytosis or climbing lactate with no other explanation
- Patients at risk for bowel injury should have:
 - Serial abdominal exams - q4 hours someone should examine the patient – preferably the same person who examined the patient before in order to identify changes in exam. Please write a simple progress note stating that you examined the patient and what the exam was at that time (no cosigner necessary).
 - CBC, CMP in the AM, Lactate Q 6
 - Telemetry
- Notify your senior immediately of any changes in vitals, fevers, increase in abdominal pain, or change in exam on serial exam.

Bladder Rupture

- Majority associated with blunt trauma especially pelvic fractures and obturator ring fractures
- Majority have gross hematuria
- Work-up – CT cystogram with fully distended bladder
- Extra-peritoneal rupture
 - typically non-op management with foley
 - Urology consult
 - Repeat cystogram in 7-10 days
- Intra-peritoneal
 - Exploratory laparotomy with repair
 - Foley for 7-10 days
 - Cystogram prior to foley removal

Blunt Cerebrovascular Injury

- Screen patents with CT angio of neck if they have high risk injuries/findings:
 - Signs/symptoms of vascular injury of neck: hematoma, cervical bruit, evidence of arterial hemorrhage, pulsatile mass, etc.
 - Focal neurologic deficit
 - Neurologic examination incongruous with CT findings
 - Lefort II or III mid-face fractures or mandibular fracture
 - Cervical spine fracture
 - Basilar skull fracture involving the carotid canal
 - Ischemic stroke on CT scan (initial or repeat CT scan)
 - Head injury with DAI with GCS =6
 - Near hanging with anoxic brain injury
 - Seat belt sign with significant swelling or altered mental status
- If injury found:
 - Grade the lesion (ask for senior's help or refer to radiology's description of the lesion):
 - Grade I—intimal irregularity with 25% narrowing
 - Grade II— dissection or intramural hematoma with 25% narrowing
 - Grade III—pseudoaneurysm
 - Grade IV— occlusion
 - Grade V—transection with extravasation.
 - Place diagnosis in EPIC problem list
 - Consult vascular surgery if injury involves the carotid bifurcation or proximal common carotid; consult Neuro-IR for injury of the internal carotid above the level of the jaw.
 - Discuss starting Aspirin or heparin drip with the attending
 - Orders to consider:
 - +/- ICU admission (discuss with senior)
 - Q1 hour or Q2 hour neurochecks based on level of care (ICU vs intermediate)
 - Repeat CT angio neck and non-contrast CT head for significant decreases in GCS or new focal neurologic findings. Consider activating a stroke response.

Common Acute General Surgery Diagnosis

Acute Appendicitis

- Perform history and physical exam
- Document using an ACS Consult note – if admission or surgery planned, copy and paste consult note contents into H&P and change the title within the note to ACS History & Physical.
- Place diagnosis in the problem list in EPIC and make this the principle problem.
- Orders to consider:
 - If not already obtained, consider CT scan of the abdomen and pelvis with IV and PO contrast for females of childbearing age or male patients with atypical presentations
 - IVF bolus if patient is under-resuscitated, and maintenance IVF
 - IV antibiotics – discuss with senior (typically Unasyn, Zosyn, or Cipro/Flagyl). Please ensure antibiotics are administered as soon as possible
 - Admission vs Observation – discuss with senior but majority will be observation
 - IV pain medication
 - NPO
- If operation planned:
 - Consent patient
 - Procedure: Laparoscopic verses Open Appendectomy, possible bowel resection, possible ostomy
 - Risks: Bleeding, infection, damage to surrounding structures, need for further procedures, hernia, abscess, fistula, anastomotic leak, need for ostomy, scar, pain, risks of anesthesia including cardiopulmonary failure, blood clot, stroke, and death.
 - Place OR case request – typically booked as a level B within 4 hours or a level C case within 12 hours (discuss with senior).
 - Complete an h&p update
- Post-op orders should include:
 - ADT: OPEC vs observation vs admission - ask senior
 - Maintenance IVF (typically D51/2NS but adjust as necessary) Saline lock when PO intake >500cc
 - Diet: clear liquids advance as tolerated
 - Pain control: Norco or Percocet with IV pain medication for breakthrough only
 - Ambulate patient
- Minimum discharge requirements:
 - Tolerating clear liquid diet
 - Ambulating (or at baseline activity)
 - Pain controlled with PO pain medication only
- Follow-up in ACS Clinic on the Thursday that is at least 10 days post-op

Acute Cholecystitis/Symptomatic Cholelithiasis

- Perform history and physical exam
- Document using an ACS Consult note – if admission or surgery planned, copy and paste consult note contents into H&P and change the title within the note to ACS History & Physical.
- Place diagnosis in the problem list in EPIC and make this the principle problem.
- Orders to consider:
 - If not already obtained: ultrasound of the right upper quadrant. If from outside hospital, consider repeat here if images or report are missing.
 - CBC, CMP, Lipase – will need daily CMP prior to OR
 - IV antibiotics if acute cholecystitis – typically Zosyn
 - Fluid resuscitate patient if needed
 - Admission vs Observation – ask senior
 - IV pain medication
 - NPO
- If operation planned:
 - Consent patient
 - Procedure: Laparoscopic verses Open Cholecystectomy, possible intra-operative cholangiogram, possible common bile duct exploration
 - Risks: Bleeding, infection, damage to surrounding structures, need for further procedures, hernia, abscess, biloma or bile leak, injury to the common bile duct, retained gallstone, scar, pain, risks of anesthesia including cardiopulmonary failure, blood clot, stroke, and death.
 - Place OR case request – typically booked as an urgent case within 24hours or a scheduled case (discuss with senior).
 - Complete an h&p update
- Post-op orders should include:
 - ADT: OPEC vs observation vs admission - ask senior
 - Maintenance IVF (typically D51/2NS but adjust as necessary) Saline lock when PO intake >500cc
 - Diet: clear liquids advance as tolerated
 - Pain control: Norco or Percocet with IV pain medication for breakthrough only
 - Ambulate patient
 - CMP in AM after OR
- Minimum discharge requirements:
 - Tolerating clear liquid diet
 - Ambulating (or at baseline activity)
 - Pain controlled with PO pain medication only
 - Normal bilirubin
- Follow-up in ACS Clinic on the Wednesday that is at least 10 days post-op

Cholelithiasis

- See Acute Cholecystitis/Symptomatic Cholelithiasis for management with the addition of the following:
 - Trend CMP (q12hrs) if the T. Bili is rising but is <4 order an MRCP. If >4 call GI for consult for ERCP
 - If MRCP demonstrates stones in the common bile duct or the T. Bili continues to rise consult GI for ERCP
 - Monitor for signs of Acute Cholangitis
 - IV antibiotic coverage with Zosyn
 - If abdominal pain worsens after ERCP check a lipase level as patient may develop post-ERCP pancreatitis. Refer to pancreatitis section.
 - Laparoscopic vs open Cholecystectomy prior to discharge

Gallstone Pancreatitis

- See Acute Cholecystitis/Symptomatic cholelithiasis for management with the addition of the following:
 - Evaluate for need for resuscitation – pancreatitis patients often need initial resuscitation
 - Evaluate for causes of pancreatitis other than gallstones such as ETOH, elevated triglycerides, medications, etc
 - Monitor lipase and CMP daily
 - Monitor for resolution of tenderness on exam and improvement in subjective pain prior to OR – discuss OR timing with senior.
 - No need for antibiotics unless cholecystitis or choledocholithiasis are concomitant

PEG/Trach

- Go evaluate the patient for the following:
 - Why is the PEG/Trach needed? Ie: head injury with low GCS, unable to wean from vent, persistent dysphagia, etc.
 - How long has the patient failed ventilator weaning trials?
 - Is the patient expected to recover quickly or over a prolonged period of time?
 - Is dysphagia documented and do the speech therapists recommend a PEG?
 - What are the vent settings? What is the WBC? Is the patient septic? On pressors?
 - Does the patient have the ability to distend their neck? Is the neck fat? Can you palpate the cricoid membrane?
 - Has the patient had previous abdominal surgeries? If so, what surgeries? Where are the scars?
 - Does the patient have ascites?
- Find out if the primary team has discussed the PEG/Trach with the patient and/or Family. If they have not discussed it with the family contact the person who called for the consult and ask they to approach the family before the ACS service does. This will prevent a lot of unnecessary questions by family that you are not handled to answer.

- If the family has been notified of the request for PEG/Trach and they agree to proceed with the procedure you should obtain consent.
 - Official PEG procedure title for consents: Esophagogastroduodenoscopy, Percutaneous Endoscopic Gastrostomy placement, possible laparoscopic gastrostomy, possible open gastrostomy
 - Specific risks: un-planned perforation of the esophagus, stomach, and colon, peritonitis, cellulitis, abscess, gastrostomy tube dislodgement
 - Official Trach procedure title for consents: Percutaneous versus open tracheostomy
 - Specific risks: loss of airway, trachea-innominate fistula, tracheal stenosis
- If the senior asks for the patient to be booked place an OR Case Request
 - Book as a scheduled case with the date the senior requests
- Ensure the patient is placed on the list and that an H&P update is placed in the chart on the day of surgery
- Tracheostomies will not be changed prior to the 7th day post-trach. If the patient is requiring continued ventilator support we will not change the tracheostomy until the patient is off the ventilator. LTACH facilities can change tracheostomy appliances. If there is a request to change a trach on a vented patient please discuss this patient with the senior.
- Trach changes should be supervised by the senior resident or the nurse practitioner.
- PEG tubes should be loosened on POD #1. The PEG should not cause indentation in the skin and the tube should be able to spin freely
- All PEG patients need an order for an abdominal binder to be in place at all times to protect the tube from being pulled by the patient.
- No gauze should be under a PEG tube. If there is a large amount of drainage or the tube is more than 6 weeks old a single gauze is all that should be required. Ask the nurses to apply a barrier cream around the PEG to protect the skin from any leakage of gastric contents.

Muscle Biopsy

- Muscle biopsies can only be performed at the main campus on Monday through Thursday 7:30am to 5pm as the specimens have to be overnight shipped to outside laboratories.
- You must obtain a muscle biopsy information packet from the pathology department on the 2nd floor of the medical center. This form is placed in the chart and the primary team must fill it out. You must tell the primary team to fill out the paper. The patient will not be taken into the operating room unless the packet is completed.
- The specimen needs to be taken as a fresh specimen directly to pathology. Do not close the wound until you have verification from pathology that the specimen is adequate.

Common Floor Management Issues

Nausea/Vomiting

- Go assess the patient
 - Questions to ask (or look up):
 - Are they just nauseated or are they vomiting?
 - Have they been on a diet or tube feeds?
 - Do they already have an NGT in place? Is the NGT functioning? Is the NGT clamped?
 - Is the nausea temporally related to eating, drinking, or any medications?
 - Why is the patient in the hospital? Are they post-op? If so what surgery? Do they have a bowel anastomosis? Is there a surgical/traumatic contraindication for NGT placement? (esophageal or gastric anastomosis, Lefort II or III facial fractures)
 - Examine the patient – listen to heart and lungs and examine the abdomen
- If on a diet make them NPO
- If the patient is actively vomiting maintain patency of the airway (sit the patient upright if no spinal precautions or lay the patient on their side immediately and use suction to keep the airway clear. Slow the vomiting with a dose of zofran while you get an NGT. As long as there are no contraindications to NGT -place an NGT and put it to low wall suction if you have enteric contents return. Obtain a KUB for placement.
- Consider Zofran or other anti-emetic if the patient already has an NGT (that is functioning properly), has a benign exam with no active vomiting, has mild nausea that is temporally related to pain medication

Electrolyte Repletion

Potassium:

- **Goal of 4.0**
 - Every 10 meq of supplemental K will increase K by 0.1 *** If K is less than 3.2 you will need to replace more than expected therefore you should replace then check a potassium level and replace again if not 4.0
 - Replace orally (K dur) if able to take PO medications
 - Replace by IV (potassium chloride) if cannot take PO or if severe hypokalemia
 - Only 10meq/hour of potassium may run at once outside of the ICU to avoid cardiac complications – 40meq IV KCL will run over 4 hours
- Ex: Potassium 3.8; give 20meq K dur or 20 meq potassium chloride)

Magnesium:

- **Goal of 1.0**
 - Oral: Every 400 mg will increase Mg by ~ 0.1
 - IV: Every 2gm will increase by 0.2
 - Replace orally (magnesium oxide; available as 400 or 800mg tablets) if able to take PO medications - Extremely poor bioavailability, so you can give extra (even double).
 - Replace by IV (magnesium sulfate; available as 1, 2 or 4 gm) if cannot take PO or if severe hypomagnesemia
 - It is difficult to make a patient who has normal renal function hypomagnesemic (OB patients are often on drips of 2gm per hour) therefore it is ok to be generous.
- Ex: Magnesium 0.7; Give 800 mg PO magnesium oxide (can even an extra dose later in the day), or replace IV with 2g (or even 4g) magnesium sulfate

Phosphorus:

- **Goal of 1.0**
- Give 20 mmol of your repletion of choice if phos 0.8 or above
- Given 20 mmol of your repletion of choice if phos \leq 0.7 then recheck phos and re-dose if necessary
- Replace orally (Phosnak or phosneutral) if able to take PO medications
 - Phosnak; 1 packet= potassium (7.1meq)- sodium (160mg)- phosphate (8mmol)
 - Kphos neutral; 1 tablet= potassium (1.1meq)- sodium (298mg)- phosphate (8mmol)
 - Pick the one that best fits the patient's electrolyte needs. If potassium is low, pick phosnak. If potassium is high, pick kphos. Etc.
- Replace by IV (potassium phosphate or sodium phosphate) if cannot take PO or if severe hypophosphatemia
 - Choose potassium phosphate if need some K repleted as well. (each 10 mmol of kphos will increase potassium by 0.15)
 - Choose sodium phosphate if hyponatremic or if hyperkalemic and don't want to add anymore more K
- Phos runs over a long time, usually 6 hours. If it is k-phos it will also be limited by how fast the K can run as well

Ex #1: Phosphorus of 0.7 mmol/L in a patient with K 3.8 and tolerating PO intake; Give 2 packets of phosnak. This will simultaneously give about 15 meq K.

Ex #2: Phosphorus of 0.6 mmol/L in patient with K 4.8 and normal Na; Give 20mmol IV sodium phosphate (plus oral if able to take PO) then recheck phos and re-dose if necessary

Chest Pain

- Go evaluate the patient **immediately**
 - Is the patient hemodynamically stable? If not, call a rapid response or code blue and have someone call your senior/attending/SICU attending. Begin ACLS as needed.
 - Determine location, onset, radiation, timing, associated symptoms, etc.
 - Examine the patient – listen to heart and lungs, press on the chest to determine if the pain is reproduced by palpation, examine the abdomen
- Order: STAT
 - CBC
 - BMP
 - Cardiac Enzymes
 - 12 lead EKG
- If evidence of MI on EKG or cardiac enzymes call cardiology and consider chewable aspirin 325mg, morphine, oxygen, and heparin gtt (if no major contraindications).
- Replace electrolytes to K4, Phos 1, Mg 1
- Document in a blank progress note why you were called to bedside, what happened and what management/treatment were provided (no cosigner needed).

Fever

- Go evaluate the patient
 - Questions to ask (or look up):
 - Is the patient stable?
 - Why is the patient in the hospital?
 - What surgeries/procedures does the patient have?
 - What wounds, lines, tubes, drains etc does the patient have?
 - Have they been having frequent fevers or is this the first?
 - Have they had recent cultures and CXR?
 - What is the WBC?
 - Is the patient on antibiotics? If so what for?
 - Examine the patient
 - Remove the gown and dressings and evaluate all skin and wounds. Look for any erythema, induration, purulent drainage, fluctuance, palpable venous cords etc.
 - Look at the back of the head and the sacrum for infected bed sores
 - Palpate the sinuses to evaluate for sinusitis
 - Use tongue depressors and evaluate the teeth and gums for abscesses
 - Perform a rectal exam to evaluate for peri-rectal abscess.
 - Evaluate if any central lines or urinary catheters for removal
- If no physical source of infection is found and the patient has not been cultured within the last 48 hours discuss ordering the following with your senior (Interns should not order cultures without senior resident approval):
 - CBC, CMP, Lactate, Procalcitonin
 - Blood cultures - 2 sets – DO NOT DRAW FROM CENTRAL LINES OR PICC LINES, only from peripheral sticks
 - UA only – not UA with reflux unless the patient has new suprapubic tenderness, new purulent appearing urine, new flank pain or new burning with urination (all patients who urinate immediately after foley removal will have burning with urination therefore please be cautious with burning with urination)
 - Fluid resuscitation – if sepsis suspected
 - Broad spectrum IV antibiotics – after cultures are drawn

A-fib

- Immediately go evaluate the patient
- If the patient is unstable call a rapid response or a code blue
- If the patient is stable obtain:
 - STAT 12-lead EKG
 - STAT Cardiac enzymes
 - STAT CBC, BMP, Mag, Phos
 - CXR if the patient sounds like they may be “wet”
- If the blood pressure will allow give 5mg IV metoprolol. You may repeat if the blood pressure allows
- If the blood pressure allows you may push Diltiazem 10mg or 20mg IV.
- Consider diuresis with Lasix if the patient is fluid overloaded
- If the patient does not become rate controlled (HR <120) or the patient becomes unstable you will need to transfer the patient to the ICU.

Urinary retention

- Urinary retention is common post-op and in trauma patients. It is related to pain control, opioid use, patient positioning, and patient pathophysiology such as BPH
- If called for urinary retention – go evaluate the patient
 - Was a foley recently removed?
 - Does the patient have a history of BPH on medications?
 - Can the patient be allowed to stand up to urinate or place in reverse trendelenberg?
 - Does the patient have pain or fullness on palpation of the superpubic region?
- A patient must urinate within 6 hours of removing the foley. If they do not you should have the nurse straight cath the patient. If they cannot urinate again in 6 hours you should straight cath again. The third time please discuss with your senior for possible re-insertion of the catheter.
- If a patient is approaching the 6 hour mark and you are concerned you may have the patient bladder scanned. If the patient has more than 350cc on bladder scan you should straight cath the patient and not wait until the 6 hour mark.
- Discuss starting medication for BPH with your senior if the patient is a male and middle aged or elderly.

Low urine output

- UOP goal should be 0.5- 1 cc/kg/hr (of ideal body weight). This is especially important for post-op patients.
- Assess the patient to determine volume status.
 - Volume depleted: hypotensive, tachycardic, dry mucous membranes?
 - Volume overloaded: hypertensive, normal heart rate, edema, coarse lung sounds/crackles?
 - Does the patient take diuretics on a regular basis at home?
- Check input/output. Does the patient have a foley? Does the patient need a foley? If the patient has a foley consider asking the nurse to flush the foley to ensure sediment has not blocked the outflow track.
- What is their heart function? Is there a recent ECHO with ejection fraction? Are they in renal failure, or a dialysis patient? You may have the nurse bladder scan a patient without a foley to determine if the patient is retaining urine.
- If you think a patient needs volume based on your exam, and there is no evidence of heart failure or renal failure, you may bolus the patient up to 1 liter and assess for response.
 - If urine output does not pick up after 1 L, consult with your senior
- If they are a heart failure patient or renal failure patient not on dialysis, discuss with your senior to decide if they need small volume boluses or need diuresis.

Respiratory distress on the floor

- Go evaluate the patient. You cannot handle this over the phone!
 - Is the patient hemodynamically stable? If not call a rapid response or a code blue.
 - What was happening before the patient had difficulty breathing?
 - Was it sudden onset or has it been a gradual decline?
 - How much oxygen is the patient requiring? Are there physical signs of cyanosis?
 - Is their mentation at baseline?
 - Do their lungs sound clear? Are there crackles? Are there bilateral breath sounds?
 - Have they had trauma to the chest? Do they have a chest tube?
 - Place any chest tubes to low wall suction immediately
 - Notify your senior
- Orders to consider:
 - CXR
 - ABG
 - Lasix if you feel the patient is fluid overloaded
 - Determine if the patient requires ICU admission

Chest Tube Management

- Chest tubes are typically placed for pneumothorax, hemothorax, or surgical entry into the chest cavity during an adjacent procedure. You should know why the patient has the chest tube.
- Every attending will have a slightly different way of managing chest tubes. Here are some basics that most attendings will agree on.
 - If you place a chest tube for hemothorax you should follow the hourly output for the next 6 hours. If the initial output upon placement is greater than 1500ml the patient may require a thoracotomy. If the chest tube output is greater than 250cc/hr for 4 hours the patient will also require evaluation for thoracotomy.
 - After chest tube placement you should obtain a CXR for placement
 - The fluid column within the chest tube tubing should vary with respirations
 - If there are constant bubbles in the blue liquid there is a leak.
 - This leak may be in the lung tissue itself or from the tubing. You should evaluate the tube and make sure there is not a leak at the chest wall.
 - look for the presence of a visible hole in the tube to indicate the last hole is out of the chest
 - look for skin that gapes away from the tube which may allow air from outside to be sucked into the chest
 - The leak may be in the tubing itself. Make sure that the connections are tight. Also you may temporarily clamp the tube at the chest wall. If the tube is clamped all the way at the chest wall and the leak persists there is a hole in the chest tube circuit somewhere. You should consider replacing the pleuravac (chest tube box and tubing).
 - If you rule out a leak from the tubing or skin, a leak from the lung tissue can be watched as long as the patient does not have worsening subcutaneous emphysema.
 - Patients should have daily CXR when they have a chest tube in place
 - If a patient with a chest tube develops difficulty breathing, place the chest tube to suction if it has been on water seal and obtain a CXR
 - If a chest tube has been placed to water seal from suction you should obtain a CXR 4-6 hours later to evaluate for pneumothorax.
 - If a chest tube has been pulled out you should obtain a CXR 4-6 hours later to evaluate for pneumothorax.
- Attendings will have different thresholds for output to remove the tube but a general guide is 2cc/kg of ideal body weight.

Substance withdrawal

ETOH

- In a patient with significant ETOH history monitor for signs of withdrawal which include:
 - Anxiety, irritability, agitation progressing to severe confusion
 - Shakiness
 - Excessive perspiration
 - Tachycardia
 - Hypertension
 - Fever
 - Headache
 - Dilated pupils
 - Seizures
 - Hallucinations
 - Loss of appetite/nausea/vomiting
- Discuss treatment with your senior:
 - CIWA protocol with your senior (+/- Ativan)
 - long acting benzo such as Librium
 - Beer
- Low threshold for ICU admission especially if associated with tachycardia, hypertension, fever, or seizure, severe agitation

Heroin

- If a patient is on heroin or methadone determine the amount they take and if it is daily. Ask if they know the dose of methadone if they have taken it in the past.
- Ask the patient what symptoms they have when they withdraw as symptoms vary. Common symptoms:
 - Anxiety, depression, insomnia, hypertension, tachycardia, muscle spasms, nausea./vomiting, goose bumps, frequent yawning, sweats/chills, runny nose, tremors
- Consider methadone or clonidine
- Be wary of aspiration

Meth

- Withdrawal symptoms: extreme fatigue, lethargy, depression, excessive sleepiness, anxiety, headache, muscle pain
- Treatment is supportive care for symptoms
- There is the potential to develop psychosis – call psych if needed

Wound vac

- Type “wound vac” to find the order
- Typical settings are 125mmHg or 75mmHg – ask the senior
- If there is a leak use extra plastic from placement or large tegaderms to try to obtain a seal – you can try this on your own. If you can’t get it to seal ask the senior for help
- If a large amount of frank blood starts coming out of a wound vac shut the suction off. Take down the wound vac and find the bleeding area and apply direct pressure. Have the nurse call your senior.
- Order a wound care consult for negative pressure therapy. Changes typically are Monday, Wednesday, and Friday.
- If you change a wound vac on the floor you must document this in a bedside procedure note (other procedure) and label it negative pressure dressing application. You must document the total square centimeters the wound covers (easy reference is an index card is roughly 100cm²)
- For discharge:
 - Tell case management early
 - Fill out the wound vac form with all the measurements (tip: have the wound nurse fill in the measurements and foam but they will only do this on the days they change the vac. If you miss them you will need to fill it out based on their note in epic)
 - Have the attending sign the wound vac form for home.

Wound care/Ostomy

Wounds

- Type in “wound” in the order search bar then click on “facility.” You will find all the possible orders for wound care in that list including wound vac, wound care orders, and wound/ostomy team consult.
- If a patient has a wound that the nurses will pack or do dressing changes there must be a wound care order that explicitly lists the wound care and frequency of changes.
- MDs do the first dressing changes for wounds
- Do not take down fresh post-op dressings unless there is a large amount of bleeding, concern for cellulitis/nec fasc of the wound, there is packing that must be changed, or you are instructed to by your senior. After 48 hours you can remove post-op dressings (on ACS wounds only) without asking.
- If a patient has wounds present on admission you must put that in your H&P or 1st progress note and state that the wounds were present on admission
- If the patient develops wounds in-house the wounds must be documented in the progress note and it must be documented that the patient or family was made aware of the wound
- Stage all decub ulcers
- Order a wound care consult to eval all wounds that are not surgical wounds.
- Order a mepilex to the sacrum if a patient is not mobile

Ostomy

- Place a wound care consult for ostomy care and education
- If there is difficulty getting an ostomy to stick, call the ostomy nurse. If the ostomy nurse is unavailable, call your senior.
- Discuss the ostomy with case management to provide supplies
- On discharge:
 - Copy and paste the list of supplies from the wound care nurse’s note into a “misc supplies” order.
 - The misc supplies order is entered in the discharge Med Rec tab.
- If you care called for bleeding from the ostomy, take the ostomy down and determine if the blood is coming from the skin or edge of the ostomy or from the stool coming from the ostomy itself. Bleeding from different sites is managed with different treatments/workup.

PICC lines

- PICC lines are considered central lines and should be removed as soon as possible.
- They should only be placed for medications that cannot be give via peripheral access such as TPN, pressors, hypertonic saline, long term antibiotics for home, etc.
- Order a midline for a patient that just needs IV access and is a hard stick
- Document in your progress note daily the reason the PICC line cannot be discontinued
- Order a PICC by placing a “PICC Evaluation and Placement” order
- You will need to obtain consent from the patient or family member. The PICC nurses do not consents.

- PICC Consent specific risks: bleeding, infection, blood clot, arrhythmias

TPN

- order a Nutrition consult for TPN
- TPN requires:
 - A central or PICC line
 - An order for TPN signed prior to 2pm
- While on TPN patients require Q6 hour blood glucose check

Appendix A - Consent Cheat Sheet

Common Attendings taking ACS call who should be on all consents:

- Richard Catalano
- Lester Mohr
- Kaushik Mukherjee
- Sigrid Burruss
- Daniel Srikureja
- Esther Yung (Wu)
- Paul Wisniewski
- Jeffery Quigley
- Meghan Cochran-Yu
- Martin Rosenthal
- Maryam Tabrizi

For Consents please use the generic procedure risks and add the specific risks for the procedure being performed:

Generic Risk + Specific Risk = Complete Consent Risks

Generic Risk:

- Bleeding, infection, damage to surrounding structures, need for further procedures, pain, scar, risk of anesthesia including cardiopulmonary failure, blood clot, stroke, and death.

Specific Risk:

- **Exploratory Laparotomy:**
 - **Title for consents:** Exploratory laparotomy, possible bowel resection, possible ostomy
 - **Specific Risks:** anastomotic leak, enterocutaneous fistula, ostomy, need for feeding tube, hernia, open abdomen
- **PEG:**
 - **Official PEG procedure title for consents:** Esophagogastroduodenoscopy, Percutaneous Endoscopic Gastrostomy placement, possible laparoscopic gastrostomy, possible open gastrostomy
 - **Specific Risks:** un-planned perforation of the esophagus, stomach, and colon, peritonitis, cellulitis, abscess, gastrostomy tubedislodgement
- **Trach:**
 - **Title for consents:** Percutaneous verses open tracheostomy
 - **Specific Risks:** loss of airway, trachea-innominate fistula, tracheal stenosis

- **Cholecystectomy:**
 - **Title for consents:** Laparoscopic verses Open Cholecystectomy, possible intra-operative cholangiogram, possible common bile duct exploration
 - **Risks:** biloma or bile leak, injury to the common bile duct, retained gallstone, need for a drain
- **Appendectomy:**
 - **Title for consents:** Laparoscopic verses open appendectomy, possible right hemicolectomy
 - **Risks:** anastomotic/stump leak, enterocutaneous fistula, abscess, hernia
- **Chest Tube:**
 - **Title for consent:** Tube thoracostomy (specify laterality)
 - **Risks:** Bleeding, infection, damage to surrounding structures, need for further procedures, placement into the abdomen, lung laceration, bronchopleural fistula, retained hematoma, empyema, reaction to local anesthetic

ACS Sign-Out

Sign-out occurs at 6:30am and 6:30pm including the residents and attendings. Morning sign-out is a thorough sign-out of all admissions and consultations (how patient presented, PMH, PE, labs, imaging, and plan). Morning sign-out also includes a review of any pertinent events that occurred overnight. Evening sign-out includes a thorough sign-out on patients that the primary team is concerned about. This utilizes the I-PASS mnemonic and severity of illness on a continuum. Patients that receive a more detailed sign-out with are the “watchers” and “unstable” patients. A stable patient as outlined below on the severity of illness continuum does not require a detailed sign-out. Morning and Evening sign-out includes a list of operative cases and in what order they should be done pending other emergent operative cases. The OR must be notified of which cases are planned both in the morning before 6am and in the evening before 6pm.

I-PASS Pneumonic

Mnemonic Letter	Description	Key Points
I	Illness Severity	<ul style="list-style-type: none"> • Identification of patient’s level of acuity to focus attention appropriately at the start of the handoff communication • Suggest classifying each patient using a standardized language such as stable, “watcher” (a patient where any clinician has a concern that a patient is at risk of deterioration), or unstable • May include code status • Classification may vary depending on unit acuity, provider type, or institutional culture
P	Patient Summary	<ul style="list-style-type: none"> • Describes succinctly the reason for admission, events leading up to admission, hospital course, and plan for hospitalization • Should reflect global plan for entire hospital stay and avoid “to-do” items for next shift • Should be maintained and updated regularly with modification of assessment, diagnoses, and changes in treatment plans as necessary • Events leading up to admission may be truncated with time and diagnostic certainty yet should retain key reason for admission to allow new providers to understand nuances of presentation
A	Action Items	<ul style="list-style-type: none"> • Includes a “to-do” list with specific elements to accomplish over next shift by team assuming care of patient • Should specify timeframe for completion, level of priority, and who is responsible • Specify “nothing to do” if no action items are anticipated
S	Situation Awareness and Contingency Plans	<ul style="list-style-type: none"> • Situation Awareness: knowing what is going on for members of the care team (status of patients, environmental factors, team members) and for each individual patient (status of disease process, progress towards goals for hospitalization) • Contingency Plans: with situation awareness in mind, provide team assuming care of the patient with specific instructions for how to handle anticipated problems. <ul style="list-style-type: none"> • Typically includes “if/then” statements • Specify “no contingencies anticipated” for stable patients • Ensures accepting team is prepared to anticipate changes in patient status and respond to potential events
S	Synthesis by Receiver	<ul style="list-style-type: none"> • Provides a brief re-statement of essential information in a cogent summary by receiving team • Demonstrates information is received and understood • Ensures effective transfer of information and responsibility • Opportunity for receiver to clarify elements of handoff, ensure clear understanding, and play an active role in handoff process • Will vary in length and content depending on acuity level of patient • Should prioritize re-statement of key action items and contingency plans: not a re-statement of the entire verbal handoff

Illness Severity as a Continuum



- Stable: nothing to follow-up on. No need to communicate complete patient story
example: "Patient Smith is stable"
- Watcher : *any* clinician's "gut feeling" that a patient is at risk of deterioration or "close to the edge" or the patient has a To Do list
Example: "Patient Smith required 1 unit of PRBC today. He has a f/u CBC at 10pm. If the Hb did not respond appropriately he will need a CT angio to evaluate for ongoing bleeding in the pelvis"
- Unstable: *any* patient that is hemodynamically unstable or otherwise requiring active and ongoing care.
Example: "Patient Smith is a consult from the MICU for abdominal compartment syndrome. The nurses are setting up the bladder pressure monitor but they continue to go up on pressors. He may need a decompressive laparotomy."