

# UCSF Surgery Intern Handbook 2022-2023

*“To be a good surgical resident you need to do two things:  
Work hard and don’t lie.”*

*- Hillary Braun, UCSF Surgery Resident Class of 2023*



*Disclaimer: This handbook is written by current UCSF surgery residents for incoming UCSF surgical interns. Its purpose is to be a resource from peers to new trainees who are getting acquainted with our hospital systems. The contents of this book should be followed as a guide, not as a strict rulebook. Our advice may not be applicable to all circumstances, so should be considered within the context of your clinical situation.*

*Last updated: May 2022*

Original authors

Alexis Colley

Caroline Melhado

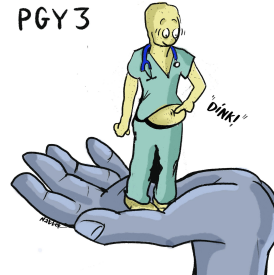
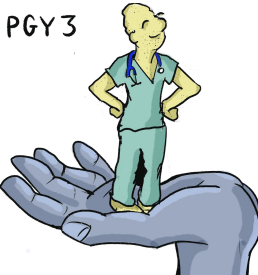
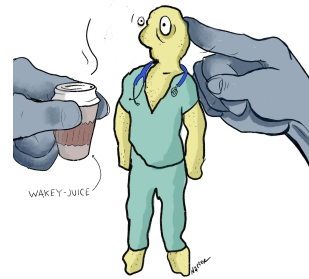
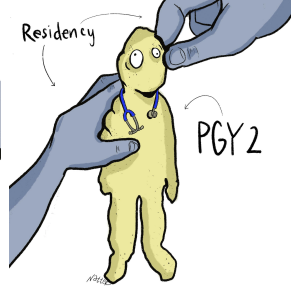
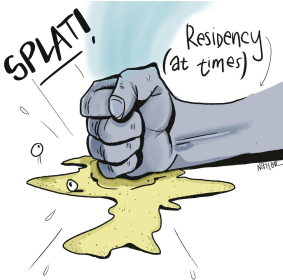
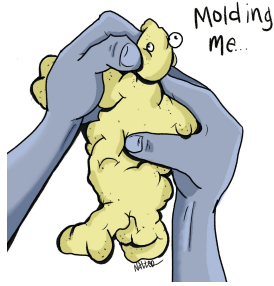
Ava Yap

Version 2022-3 Editors

Alex Highet

Joe Lin

Ava Yap



Credit: Mike B. Natter, MD  
Instagram: @mike.natter  
Used with permission.

## CONTENTS

<b>Keys to Success as an Intern</b>	<b>5</b>
<b>Team and Provider Communication</b>	<b>8</b>
Within the team	8
To Consulting Services	9
<b>Structure of a Day as an Intern</b>	<b>10</b>
Pre-rounding and rounding	10
Prioritizing tasks of the day	11
Later on in the day	11
Independent Orders	12
<b>Sign-out/Handout</b>	<b>13</b>
<b>Multidisciplinary Rounds (MDR)</b>	<b>15</b>
Members of the MDR	15
<b>Intern Life Hacks and Meds</b>	<b>17</b>
“Summary” Toolbar	17
Electrolyte Repletions	17
Insulin Sliding Scale (ISS)	18
Vasopressors	19
Inpatient anticoagulation	20
DVT Prophylaxis	20
Heparin drip	20
Pain regimens	21
Bowel regimen	22
Anti-nausea medications	22
<b>Admit, OR, Discharge Workflow</b>	<b>23</b>
Admission Orders	23
Discharge Orders / Packet	24
Perioperative Orders & Workflow	25
<b>Switching Services</b>	<b>27</b>
<b>Top 10 Pages</b>	<b>28</b>

# Keys to Success as an Intern

Welcome to your intern year at UCSF! We know you will all be great interns and we are so excited to work with all of you over the course of the next year. The items in this book might seem confusing or overwhelming, but it will become second nature to you by the middle to end of the year. It is by no means meant to serve as a singular source in caring for patients, but more as a guide during the first few months for some of the things that you do all day long as an intern but never learned in medical school. For example - we all know how heparin works- but as interns you have to put in orders for that heparin drip and decide (without any formal teaching ) - what is the starting dose? Do you bolus or not bolus? When do you turn off the heparin drip for the OR? This section holds some of the key tenets to be a successful intern.

- **Close the loop:** Update your chief and make sure that they respond, even just with an ok. If they don't text you back, call them; if they don't answer, wait an appropriate amount of time and call again (3-5 minutes) and then call another chief or attending if you are really worried and need help. If they are in the OR, *go to the OR* and update them.
- **“Load the Boat”:** When a patient is not doing well or you are worried about them - tell your senior, tell your co-resident, tell your attending. If you think that patient is really sick, call a MERT, call a CODE. If you are worried, no one will fault you for reaching out for help. You might not know enough to know when things are really bad, but by alerting more senior people, patients do better. The lone wolf dies but the pack survives.
- **Trust but verify.** Be a good and respectful teammate to everyone else helping to take care of your patient. But, do your due diligence and know that you are only a single link in the chain.
- **Know your patients:** Their POD, antibiotics, their drain quality and studies, their family, their hometown, etc. This will all help you to take better care of them throughout their course.
- **Organize and prioritize:** Have a system to keep your to-do list up-to-date. Run the list, frequently, persistently, with your team (and

with yourself). You are the keeper of the list - make it work for you. (As one of our mentors said - 'Do you write things down or do you forget them?')

- **Stay with the sickies:** If your patient is coding/stroking, stay with them. Call your chief then call your attending. Do not leave, as you likely know the most about the patient and their pre-code condition.
- **Be nice:** To all nurses, NPs, PAs, scrub techs, and consult services. They have a lot of experience and can help you, especially when things go south for your patients. When someone is asking you or calling you with what seems like a dumb question - take them seriously as they are just asking for help in an area where they don't have expertise. They will help you later with problems that you don't understand.
- **Orders are a multi-step process:** place an order, call to confirm, follow up result, notify team about result, and then act on results as appropriate.
- **Clarify:** When in doubt about an order or plan - ask your senior or call pharmacy. Don't feel embarrassed you don't know the loading dose of amiodarone, no one did day 1 of intern year.
- **Document:** If you did a post-op check, write a note. If your patient went to the ICU unexpectedly, write a note. Spoke with an outpatient on the phone? Write a note. If you don't write a note, it didn't happen.
- **Freebies:** You don't need to ask your senior about ordering blood draws, urine studies and x-rays. For all significant imaging (e.g. CT, MRI), meds, boluses or blood product transfusions - ask your seniors without delaying care.
- **Get it done:** As an intern, you will often have a handful of seemingly menial, administrative tasks to complete; some of them will feel ungratifying. Nevertheless, everything we do contributes to patient care, so be your best, reliable, and thorough self and remember that these moments are temporary.
- **Ask questions:** People expect you not to know when you start out, and expect you to know later on...if you don't understand why your senior wants a certain study (like CT with or without contrast), just ask. Intern year is a golden time to learn and to ask.
- **Don't Lie:** If you didn't have time to do something - say so. If you didn't post-op check a person or look at their scan/labs- say so. People now trust you as a doctor and rely on you.

- **When you mess up, don't mess up.** People make mistakes, it happens. But when you do, don't make it worse by lying about it, not doing the right thing, etc. Just admit your shortcomings and move on.
- **Intern year is hard:** You will be sad, frustrated, depressed, lonely and angry at various times. You will also save patients because of your actions, operate, lead a team as a doctor and make friends in the most unlikely of situations. It will be fine, but lean on all of us for support - nobody should go through this alone.
- **Talk it out:** You will be a part of deaths and complications. You may feel implicated, and you may feel bowled over by these very challenging events. As much as you can, try to talk these out with a trusted friend, partner, or one of us. We will all be better surgeons the less that we keep this all to ourselves and the more that we share our fears and questions openly.
- **Don't be a stranger:** Be a team player, you will spend more time with your co-residents than probably anyone else, make some friends!

# Team and Provider Communication

## Within the team

When to contact your senior resident:

- A very abnormal lab result (K >5.5, Na <125, large Hct drop, etc)
- Acute change to mental status
- Vital sign changes
  - Temperature >101.5
  - HR >120. New arrhythmia, chest pain
  - Blood pressure <90/50
  - Respiratory distress, or escalation of O2 requirement
- Concerning wound findings: large drainage, increasing erythema, crepitus.
- Hematemesis, melena, hematochezia, hemoptysis
- When conducting a bedside procedure
- **For serious concerns, FIND YOUR CHIEF IN THE OR, DO NOT TEXT!**

How to contact your senior resident

- **Text:** For non-urgent matters. Include patient's last name, inciting event and question, supporting props to your story (exam findings, new symptoms, vital signs, relevant labs), what you think is going on and proposed plan. Think mini SOAP note format.
- **In person: Preferred** but usually not possible unless you go down to the OR. Beats calling down to OR phone (to avoid poorly transmitted speaker systems)
- **Call:** if not sure where your resident is at the moment and need to communicate new information that needs to be act upon urgently (e.g. new diffuse 10/10 abdominal pain in a patient that has concern for perf)
- **Page:** Resort to this form of contact if your senior is nowhere to be found (and don't wait too long for a response).
- **On night float:** before the shift is underway - ASK how the senior would like to be contacted if any events come up



# To Consulting Services

## Paging Etiquette

**Format:** Patient's last name MRN#: age + gender, one-liner, consult question. Your name, service. Closest 5 digit extension call-back (x#####), pager (p#####), cell (c###-###-#####)

**Example:** Romero 20483957: 72G s/p whipple, now with new DM, consult for insulin management. Ava, surg onc. x38133 p7036 c234-234-2345

## Paging pearls:

- Keep message short and sweet
- Give at least 2 ways for paged party to communicate with you (pager/cell/workroom extension)
- Wait an ~½ hour before paging again - on second page, can send only callback number
- OK to use acronyms that are commonplace (e.g DM, s/p), spell out lesser known abbreviations (e.g. DGE = delayed gastric emptying)

# Structure of a Day as an Intern

*Some of this is more specific to UC sites (Parnassus, Mission Bay) than to SFGH/Kaiser/VA, but should still serve as a starting guide.*

## Pre-rounding and rounding

- Arrive ~30 minutes before rounds, earlier if list is long of patients are complicated. Your necessary pre-rounding time will decrease substantially as you go through intern year, but remember to always respect your night float colleague and get them home on time.
- Get overnight events during signout from the night-shift; should be quick - either “nothing” or highlights
- Get updated I/O, drain output with day prior, consulting service notes and recs, imaging, available labs (use new results flag) - any info that can help guide plans for rounds
- **Look at ACTUAL IMAGES of CTs, X-rays before reading the report**
- Presenting (~1min):
  - Post-op: POD# from **\*\*surgery\*\***. Overnight events. Vitals. I/O. Labs. Plan.
  - New patients: One-liner/HPI. PE. pertinent labs and images. Plan.
  - **Always come up with a plan!** It doesn't matter if you're wrong, it demonstrates your initiative to think critically about the patient's clinical condition
- In the room:
  - Jot down patient's subjective, physical exam to help you write the progress note
  - Prepare dressing supplies (or have a med student carry for you)
  - Listen to the chief talking to the patient - this is usually the plan for the day aka your to-do list. Make note of their physical exam.
- While waiting for chief to run list with attendings about plan
  - Follow up on remaining labs
  - Reorder TPN

- Put in or pend quick orders: diet changes, IVF, medication changes
- WAIT for blood transfusions, “big” imaging, procedures, consults

## Prioritizing tasks of the day

### PRIORITY

- Consults (7:30am onwards)
- TPN (before 12-1 pm)
- Procedures or “all day” orders (e.g. NGT gravity trial, foley dc - void trial, PICC lines)
- Blood products with active type and screen
- Diet orders
- Antibiotics start/stop
- Discharge instructions and orders for patients discharging that day
- “Big deal imaging” CT/MRIs:
  - Confirm with chief and attending that this is the FINAL plan
  - Check Cr prior to giving contrast
  - If patient has contrast allergy - make sure to premedicate
    - If mild: ok to give PO benadryl 50mg 1-2 hours prior
    - If mod-severe: PO prednisone 50mg 12 hours prior, PO prednisone 50mg and PO benadryl 50mg 2 hours prior

### Less urgent

- Electrolyte repletions
- Progress notes
- Dressing changes, wound vac changes
- Discharge summary (this can usually be completed within 24h of discharge)
- Teeing up future discharges (home health, prior authorizations, SNF referrals, etc)

## Later on in the day

- Follow up imaging studies (call rads reading room for wet read - and to learn from them!)

- Follow up consult recommendations
- I/O check for patients with
  - High drain/NGT output
  - Low UOP
  - Foley removed - void check 6 hours after
- Update sign-out
- Ensure labs and other studies for the next day are ordered if needed
- PM rounds: check in on patients who have
  - Abnormal vital signs
  - Diet advanced (tolerating?)
  - Pain regimen weaned e.g epidural out (pain under control?)
  - Acute issue earlier on in the day (e.g. emesis, dizziness)
  - Family who wants update (choose wisely, may take time)

## Independent Orders

### Orders that you can place independently without asking anyone

- Orthostatics, repeat vitals (usually verbal order ok)
- Bowel regimen (unless on colorectal)
- Basic labs (BMP, CBC, LFTs, ABG)
- Urine cultures, blood cultures
- Plain films (CXR, KUB)
- EKG
- “Intern bolus” 250-500cc

FAQ: How to order a “**pan-culture**” when patient becomes **febrile** on POD2+?

Usually means (STAT), UA with reflex urine culture, Blood cultures x2 (if central line, use DTTP [differential time to positivity]), CXR

Can add tracheal aspirate if patient is intubated or high concern for pneumonia with secretions. Also think about COVID, Flu panel if appropriate.

Tip: For a nosocomial infection source - look at the lines, drains and airways (LDA) to see how long they have been left in, think about foley, infiltrated PIV, central lines, epidurals, ports, drain sites etc.

# Sign-out/Handout

This is a live up-to-date feed on each patient that should be updated everyday, with purpose and verve. It is usually the only document that moonlighters will read to get to know a patient, and it is the sheet that you read off every day.

**Make sure your 1-liner is up to date and accurate - don't let it get stagnant!**

**Taking away extraneous/erroneous information is as important as adding new information.**

## Suggestions for a good hand-off:

- **Patient's Summary | One-liner**
  - Age + gender
  - Chief problem
  - s/p surgery (date, surgeon) complicated by or readmitted for..
  - Can also include other main pertinent events (IR/CT/EGDs)
- **Situational Awareness** (Daily events) to include:
  - Changes diets (advance or scale back to NPO)
  - Fluids changes to on or off
  - Procedures (OR, IR)
  - Major imaging results
  - Consulting services recs and actions
  - Major changes in vital signs (Fever, HR, change in cardiac rhythm, O2 requirement)
  - Starting anticoagulation
  - Transfer in and out of unit (e.g. ICU to floor)
- **Illness severity**
  - Unstable, watcher, stable
  - PMH, PSH, Meds
  - Good idea to include micro data:
    - Culture data (date and type - blood, urine, drain, OR)
    - Antibiotic history (duration, medication)
  - Other labs you are trending
    - Nutrition labs (CRP, albumin, prealbumin)
    - Drain amylases
    - Interval of labs (and when next due) - especially helpful for the nightfloats

## ● Action List | To Do

- To dos: split into “night float”, “(day) team”, “dispo”
- Include contingency planning: if X, then Y (give explicit instructions)
- Active consult services and recommendations (can be placed on to do’s)
- Dispo/discharge needs: PT recs, new meds, follow up appt
- Important phone numbers (including family contact if you need to call frequently)

See example signout screenshot below:

### ☑ Patient Summary Statement | One Liner Comment

68 yo man w/ESRD s/p failed DDRT and h/o diverticulitis requiring multiple ex-laps now presenting ~1mo following ex-lap, LOA, colostomy takedown w/DLI and VHR with midline fluid collection, fevers and leukocytosis c/w abscess.

5/15 colostomy takedown, DLI, VHR

5/23 CTAP w/ IV: gas filled LLQ subcutaneous collection, free ascites, ostomy and anastomosis intact

6/10 CTAP w/ IV: larger SQ gas+fluid abscess, now 7.2 x 2.1 x 7.7 cm, pleural effusions

6/12: IR - no intervention, fluid collection resolved

Last edited by Ava Chwan Lee Yap, MD on 06/12/19 at 1836

Comment

### ☑ Situation Awareness | Contingency Planning Comment

6/12: hgb 7.6 (6.4), WBC 7.7 (12), HD -2.5L, Tm 38.8. Wound care recs for collagenase BID, IR found resolution of midline fluid collection, no intervention

6/11: Nephrology cons to PUF while transfusing 1uPRBC hgb 6.4 (7.1), IR consult for drain at midline wound. On 5 -> 2LNC, wound care consult

6/10: Admitted. NPO after midnight. IR + nephrology consults. Ertapenem given PCN allergy. 1.5L PUF overnight for hypoxia.

CTAP: Interval increase in size of a subcutaneous rim-enhancing gas and fluid collection at the site of prior colostomy with surrounding stranding measuring 7.2 x 2.1 x 7.7 cm, favored to represent an abscess.

Last edited by Ava Chwan Lee Yap, MD on 06/12/19 at 1836

### ☑ Illness Severity - stable|watcher|unstable Comment

Abx

erta 6/10-

-----

6/10 BCx

PMH: ESRD, anxiety, BPH, CAD, Cholecystitis, gout, HLD, Hyperparathyroidism, HTN, Incisional hernia, OSA, Sigmoid diverticulitis

PSH: Appendectomy; ureter revision (2011); Ex lap (07/10/2014 & 11/12/2014); Revision / takedown colostomy (11/06/2014);

Transplant Nephrectomy (02/2016); Cardiac catheterization (05/18/2010 and 10/11/2015)

Home Rx: atorvastatin 20 mg, cinacalcet 30 mg, benadryl, claritin, losartan 25mg, oxyCODONE 5 mg PRN, senna, miralax, renvela

800mg TID, sodium, potassium, mag sulfates, venlafaxine 37.5 mgvit b &c & d,

Last edited by Ava Chwan Lee Yap, MD on 06/12/19 at 2028

### ☑ Overnight Events

### ☑ Action List | To Do Comment

NF

Team

[ ] Staples out 6/13

[ ] Abx plan?

[ ] f/u wound care consult recs: Bobby Robertson, RN, CWS (415) 802-9002

Dispo

[ ] PT rec SNF

# Multidisciplinary Rounds (MDR)

Initially a daunting encounter with all the members involved in your patient care, this is a pivotal step to expedite the discharge / disposition prospects of your patients. Everyone at this meeting can guide you in various parts of a patient's care to get them closer to home. Here are the players:

## Members of the MDR

- **Charge Nurse:** will ask about nursing needs for each (floor) patient, including dressing changes, procedures, drain and tube management, after-discharge teaching, potential discharge date.
- **PT/OT:** once the PT/OT eval is ordered, physical and occupational therapists will evaluate your post-surgical patient and determine "placement" (see below), basically where s/he will be safe after discharge based on their mobility. *Bonus - mention a patient's placement during rounds to help the team know the patient's overall trajectory.*
- **Case manager/discharge planner:** Make the CM your best friend, s/he will get complicated patients out of the hospital. Based on your patient's insurance, will search for eligible nursing facilities, set up home services (nursing, physical therapy/PT, occupational therapy/OT), home IV medications, transportation.
- **Nutritionist:** Will help you get all your patients who are vomiting or unable to eat on nutritional supplementation, either ***total parenteral nutrition (TPN)*** or ***tube feeds***. Some will pend these orders for you to sign!
- **Social worker:** take care of social issues, substance use, family dynamics, sad patients who have been in the hospital forever and just need some TLC
- **Pharmacy:** Notifies you about expensive medications requiring pre-authorization if patient's insurance is not great, give you the updated doses/duration of medications you ordered, suggest alternative administrative routes, when antibiotics have been on for too long (because, oops, you didn't realize zosyn has been on for 10

days for a patient with no cultures growing), and guard you from drug interactions. Truly life-savers.

#### After Discharge Placement options

- **LTAC:** Long-term acute care facility, for v. deconditioned patients, on TPN, tubes to wall suction
- **SNF:** Skilled nursing facility, for intensive nursing, wound care, PT/OT needs
- **ARF:** Acute rehab facility, for patients who need improved mobility but otherwise well
- **Home PT/OT:** Patients who can go home with therapy sessions (needs order)
- **Medical respite:** Mostly for SFGH patients who have mild medical needs and possibly unstable housing

#### Discharge needs that need prior discharge orders:

- **Discharge to SNF orders:** diet, tube feeds, wound care, drain care, ostomy care
- **Home care:** PT/OT/RN
- **Central line:** PICC, CVC, home RN, flushes
- **IV antibiotics** (should include end date!)
- Expensive medications
- TPN orders (300 character limit, put formula, lipid rate, multivitamins, electrolytes)

#### Nursing notifications that can be entered in order

- Wound care and dressings (place order)
- Drain, NGT care and flushes
- Teaching: drains, wound, ostomy
- Insulin needs, especially with new insulin (will need **diabetes educator** to see pt)
- Difficult social context (biligerence, delicate family situation)

#### Examples of expensive meds that need pre-authorization beforehand (put in d/c order early):

- Lovenox, NOACs
- Octreotide
- Insulin
- Pancreatic replacement enzymes
- Some antibiotics: linezolid, daptomycin, Erythromycin



# Intern Life Hacks and Meds

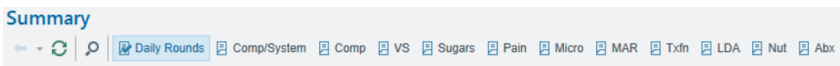
Here are some tips and tricks to set you up for success for intern year day-to-day business, as well as nuts and bolts of ordering common meds etc.

## “Summary” Toolbar

### Setting up your toolbar in the “Summary” page to get the best info quickly

In the Epic EMR, this will help you immensely with getting numbers and updated I/Os, vitals without actively clicking into each patient’s chart.

*Tip: make your “Button Name” really short to fit all the buttons in one screen for easy access. Click on the wrench icon at the right upper corner of the summary page to change/add tabs.*



- “Comp by Organ” or “Comp” - best way to see ICU settings by system
- “Vitals”
- “Glucose” - insulin requirements, FSG trend
- “Pain” - narcotic use in the last 24 hours, pain scores
- “Microbiology - By Date Collected”
- “MAR Report”
- “Hematology/Transfusion” - transfusions in last 24 hours lined up with CBCs
- “Fever/Antibiotics”
- “LDA” - Lines, Drains, and Airway (good way to see when Foley was removed)
- “Insulin/GI/Nutrition” - Look at TF or TPN rate, Insulin use
- “Adulte Kardex/Handoff” - RN’s interface of their to-do’s, may include wound care consults

---

## Electrolyte Repletions

***IN EPIC type in electrolyte to orders and click “IP Adult Intravenous Electrolytes Replacement Orders”***

- Goals are: **K 4, Phos 3, Mg 2**, (Tip: 4-3-2 rule), **Ca 8** although service-specific.
    - Potassium: give PO when possible, IV if NPO or concern for poor GI absorption.
      - To increase K by 0.1 = give 10 mEq
      - If pt has central line then can give in concentrated form (20 mEq/50 ml, if only peripheral IV then less concentrated form (10 mEq/100 ml)
      - Can give PO but the pills are large and some people have difficulty swallowing them
    - Phosphorus: usually repleted PO unless strict NPO or some liver transplant patients
      - Phos 2-2.5 = give 15 mmol
      - Phos 1-1.9 = give 21 mmol
      - Phos < 1 = give 30 mmol
      - Formulations:
        - KPhos = 15 mol phos + 22 mEq K
        - NaPhos = 15 mmol phos + 20 mEq K
        - KPhos neutral = 8 mmol phos + 1 mEq K + 13 mEq Na
    - Magnesium: replete IV
      - To increase Mg by 0.1 = give 1g Mg (up to 4g)
      - Mag citrate causes bad cramps and diarrhea (it is a laxative so do not replete with this unless your patient also needs to have a bowel movement)
- 

## Insulin Sliding Scale (ISS)

For pre- and post-operative diabetic patients:

- While in the hospital: good to hold all oral antihyperglycemic meds and switch to ISS
- On admission: start with sensitive-ISS with patient on oral meds only, average-ISS with pt on insulin or overweight. Resistant-ISS with pt who is obese or requiring >50 units of insulin per day
- NPO: hold short acting insulin, continue long acting (glargine) - give only half dose if pt is going to be NPO - you can always cover them

with short acting if they become hyperglycemic but hypoglycemia can kill someone

- Adjusting nutritional (short acting) and basal (long-acting) dosing day by day:
    - Look at the insulin requirement in the last 24 hours
    - Place half in to basal, and half in the nutritional (split into 3 meals)
    - E.g. 24units = 12 basal + 4 / 4 / 4 for each meal (12 nutritional)
- 

## Vasopressors

- Common goals: MAP >60, systolic blood pressure (SBP) >100
  - Common drugs
    - Norepinephrine (levophed): 8 mg/250 mL, titrated 0-20 mcg/min for MAP or systolic goal >\_\_\_\_
      - Usually first line, but check with senior. Notify the RN which pressors should go off first
    - Vasopressin: 100 units/250 mL, 0.04 units/min
      - Vasopressin usually on or off (sometimes as high as 0.08)
    - Phenylephrine (neo): 50 mg/250 mL, titrate 0-200mcg/min
    - Epinephrine: 0-20 mcg/min
  - Details and notes
    - If septic shock/pulmonary edema, intubation and fluid resuscitation - keep blood flowing, pulmonary secondary
    - Can run peripherally for 24h but make sure it's a good IV. Also getting micro info (IDMP)
    - With shock: watch base deficit/lactate/UOP/BP
  - **Adrenal insufficiency** - consider this if patient not responding
    - Stress dose steroids (good for CKD)
    - Solumedrol 100-125 Q6-8hrs (300-500 over 24h) over 3 days
-

# Inpatient anticoagulation

Note: always ask about plan for outpatient home anticoagulation (e.g. DOAC, warfarin) or antiplatelet therapy (e.g. aspirin, plavix) prior to surgery and when/if this should be held!

Tip: Typically, vascular patients ALWAYS continue their ASA or clopidogrel (Plavix) up until surgery as they are at higher risk for thrombosis

## DVT Prophylaxis

**Prophylaxis** or most patients (except for transplant)

- Heparin SQ
  - 5000U Q8H for post-surgical patients
  - 5000U Q12H for patients with epidural in place
- Lovenox (Enoxaparin)
  - 30mg BID for trauma patients
  - 40mg daily for post-surgical patients
  - Preferred form of PPX in cancer patients

## Heparin drip

**Heparin drip for therapeutic anticoagulation**

- Frequently used PTT goal of 50-70
- Ask chief whether this should be a RN driven protocol VS MD driven protocol - service dependent
- Heparin bolus = 80U/kg (occasionally used for surgical patients)
- Heparin infusion
  - Can start at 300-500U/hour (written in U/kg/hr)
  - Typical range of 0-25U/kg/hr
  - Concern for heparin resistance if >35U/kg/hr required to reach therapeutic state

**Heparin reversal**

- Overdose: protamine 1mg for each 100U heparin given in last 3-4 hours.
- Enox overdose: protamine 1mg per each 1mg enox in last 8 hours.
- Protamine dose should not exceed 50mg in a 10min period

---

# Pain regimens

Note: pay attention to whether a patient is able to take PO or enteral meds, as this will significantly change what pain medications are available to them.

## NON-NARCOTICS

- Tylenol for ALL PATIENTS (even cirrhotics)
  - Available in pill, IV, and solution form
  - Liver failure patients 500mg Q6H scheduled - 2g max daily
  - Everyone else 1000mg Q6H scheduled - 4g max daily
- NSAIDs (ALWAYS ASK before using, avoid in kidney disease, usually OK in ERAS patients) - patient may only be on one NSAID at a time
  - PO Ibuprofen 600mg TID scheduled
  - PO Diclofenac 50mg BID scheduled
  - IV Ketorolac 15mg Q6H scheduled
- Muscle relaxants
  - Baclofen 5mg TID
  - Robaxin 1500mg QID
- Neuropathic analgesia
  - PO gabapentin (solution/pill): 600mg bedtime, or 100mg TID start
  - PO amitriptyline: 0.1 mg/kg bedtime, increase over 2-3 wks, max 150mg
- Don't forget other great options for pain control: hot packs, lidocaine cream or patches, venlafaxine for chronic pain, PT/OT, music, friendly faces at bedside, repositioning
- If patient has an epidural or ketamine gtt, the Acute Pain Service manages all pain orders.

## NARCOTICS

1. Calculate 24 hour opioid use
2. Use table to calculate the oral morphine equivalents (OME) or consult the Pain tab
3. To calculate single PRN dose, use 10-15% of the total daily dose
4. ALWAYS ORDER PRN (unless patient is using it frequently and has become opiate experienced)

5. Best to consult Acute Pain Service or Chronic Pain Service if post-op patient is opiate experienced (~>60 OMEs)

Opioid	OME Factor	Routes	Half life (hrs)	Starting Dose
Tramadol	0.1	PO	6	25-50mg Q8h
Codeine*	0.15	PO	3	15mg Q4h PRN
Oxycodone	1.5	P	3-4	5-10mg Q6h PRN
Morphine	1	PO, IV	2-4	1-2mg Q4h PRN
Dilaudid	4 (PO)	PO, IV	2 (IV), 3-4 (PO)	0.2-0.5mg q4h PRN
Methadone	3	PO	8-59	Ask Pain Service
Fentanyl	7.23 (patch)	IV, patch	IV (1), patch (72)	Ask Pain Service

\*Pro-tip: You can order **Tyco #3** (Tylenol with codeine) without a DEA license.

So order this if you get called in the middle of the night about a patient in severe pain in the outpatient setting.

OME = oral morphine equivalents

## Bowel regimen

**Note:** most patients who have just undergone GI surgery should **NOT** be on a bowel regimen on POD0-1. Only when they start to exhibit signs of bowel function should they be started on a stool softener

**Most common:** senna 17.2 mg QHS, Miralax 17 grams, dulcolax supp. 10mg

Agent	Mechanism of Action
Mineral oil	Lubricate stool
Lactulose	Osmotic (strong!)
Miralax (polyethylene glycol)	Osmotic
Docusate	Decrease stool surface tension to allow water to penetrate
Senna	Stimulate peristalsis of small bowel
Dulcolax (bisacodyl)	Stimulate colonic motility
Metamucil (psyllium)	Absorbs water to promote peristalsis

## Anti-nausea medications

- Ondansetron (Zofran): 4-8mg IV or PO Q6h
- Prochlorperazine (Compazine): 2.5-10mg IV or PO q4h
- Promethazine (Phenergen) 12.5-25 mg IV Q6h
- Metoclopramide (Reglan) 5-10 mg PO/IV/IM q6-8h

Tip: Always get EKG if patient needs >1 antiemetic, as QTc can get prolonged

# Admit, OR, Discharge Workflow

## Admission Orders

For most services: Use IP Adult Core Admission Orders - can only be accessed in "Admission" tab

**VANDALISM Acronym** to help you remember orders

**V**itals - Q4H standard

**A**llergies

**N**ursing orders: Wound care, tubes/drains, SCDs, tele/CPO, ICS, neuro checks

**D**iet

**A**ctivity

**L**abs: Admission + "QAM" (NOT In AM unless you want to order only 1x day after)

**I**V fluids (LR or NS initially, 4+2+1 rule)

**S**tudies: EKG, imaging

**M**edications: Antibiotics, home meds, DVT prophylaxis, Pain, Insulin Sliding Scale

- Meds to hold: diuretics, oral anti-hyperglycemics, ACE/ARBs
- Meds to restart: beta-blockers (with hold parameters), chronic pain meds
- Meds to ask senior before starting: anticoagulation, benzos

Pro tip: you can 'pend' these orders in their active inpatient admission encounter before they arrive, so that they can be ready for the admitting RN to release when the patient lands

Other things to do when admitting:

- Add patient to list -> via 'treatment team'
- Notify rest of team that patient is being admitted (include MRN)
- Check with patients home meds that s/he is on
- Will need an H&P note day of admission
- SEE/greet the patient when they arrive - you are often the first person on the team to meet them!

# Discharge Orders / Packet

- Pearl: Start planning discharge DAYS in advance, even day of surgery if discharging home the next day!
- Access the following toolbar from the “Discharge” Tab

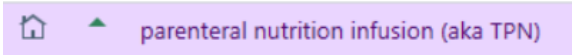
<b>Set Home Pharm...</b>	Make sure home pharmacy address is verified with patient so you can send all your discharge medications here
<b>Rx Routing</b>	Usually defaults to “Normal”. If discharging patient to SNF, select “None” - will not prescribe to any pharmacy, but will just pop up in DC summary.
<b>Discharge Orders*</b>	Reconcile discharge and inpatient orders here. Also can place home care or SNF orders. TPN, infusion orders. Referral to other services. Outpatient imaging (e.g. CTAP)
<b>Booked UCSF Appointments</b>	Check here to see if patient already has a follow up appointment. Usually it has not been booked. If not: <ul style="list-style-type: none"> <li>● Ask day before/of discharge about when pt should be scheduled for follow up appointment</li> <li>● See if patient needs concurrent studies (e.g. CT, IR tube check), order these in “Discharge Orders”</li> <li>● Call or email service specific scheduler for date and time</li> <li>● Check this tab again to confirm appointment</li> </ul>
<b>Discharge Instructions</b>	This box is for you to fill out post-surgical instructions for the patient after discharge. It should include future appointments, brief description of surgery, instructions on diet, pain management, meds, wound care, drain care, activity, call-back criteria. There are usually smartphrases floating around that almost all residents use. Ask around!
<b>Discharge Summary</b>	Last to be filled out, can be done after patient is discharged home. However, if patient is going to <b>SNF or LTAC facility, needs to be done before discharge - plan accordingly.</b> Starting this early (even on day of admission) and populating it as you go can save you a lot of pain. <b>It is respectful, good etiquette, and safest for patient care to update your discharge summaries before you leave a service, for the oncoming intern.</b>

**\*Important Discharge Order Sets** that you can order for home services in the “discharge” context. Add these to your favorites early on to avoid hold-ups with more complicated patient dispos!

- IP Adult After-Discharge Orders for Home / Home Care



- IP Adult After-Discharge Orders for SNF / Interfacility Transfers
- ID Adult After-Discharge IV Antibiotic Orders for Home / Home Care
- Outpatient Infusion Orders - Adult
- Ambulatory referral to... (any consulting service that requires outpatient follow up)
- Parenteral total Infusion (aka TPN) - Must have a house icon to signify home med



## Perioperative Orders & Workflow

### Booking Cases

When ordering a “case request” for add on case: make sure you check “add-on” as an option

What to put in the “scheduling comments”

- - NPO since when
- - COVID PCR test date, pending or negative
- - special equipment
- - Precautions (contact, respiratory)
- - location of patient (floor and unit)
- - name of person requesting with pager number
- - availability of surgeon

Important points:

- CALL down to OR front desk to confirm booking if add on case
- Call anesthesia E1 if this is an add-on case
- Note: Check on caseview (if at UCSF campus) to make sure it’s on the board

Important: Make sure they have a **COVID PCR test pending or negative prior to booking** - the OR will check before scheduling!

### Transfer/Post-op Orders

- If scrubbed in - Before surgery is over, check in with the attending with the following:
  - OK for NSAIDs for pain control?
  - OK to start HSQ or lovenox for DVT PPX?

- Diet plan?
- Foley stays in or out? If so, for how long?
- Labs in the PACU?
- If patient is discharging from PACU (outpatient procedure):  
Narcotics? Follow-up appointment? Specific wound care,  
drain care instructions?

Handy dandy system smartphrases on Epic:

.TODAYDATE : Refreshable date

.RRDAYSPOSTSURGERY : post-op day

.ONELINER : import one-liner content from sign-out

.LPPLINK(304465450) : import illness severity

.PMHPNN : Past medical history

.PSHP : Past surgical history

.MED : Home medications

.LTUSURGLABBLOCK : labs in block form

# Switching Services

Service hand off etiquette:

1. It is expected that you will both give and receive sign out on the patients.
  - a. You should look at the schedule and figure out who is covering the service you will go to next. Contact that person to work out a time for signout.
  - b. Expect that the intern coming on to your service will contact you, but if you have not heard from them within 24 hours of the end of the rotation, make sure to contact them.
2. Options for signout (pretty much any combination of):
  - a. Email (if including HIPPA data, use “secure: signout” as the subject line to encrypt the email)
  - b. Phone
  - c. In-person
3. What gets included:
  - a. 1 liner
  - b. Recent hospital issues
  - c. Plan for the next day (so your co-intern doesn't have to start their rotation without a plan on patients they don't now)
  - d. Discharge barriers - looking for SNF, etc.
4. Service details
  - a. You also need to communicate details like where to go for signout, what time, etc. as each service is slightly different. At the very least, make sure you know (1) where to go for signout, (2) at what time, and (3) who your team will be. Also try to give a list of any door keypad codes.

# Top 10 Pages

## General approach

- First: Be calm, and read on. Pages might be time sensitive but almost all pages are not emergent.
- Be systematic: WHY (what is the cause)? HOW (how concerned do I need to be)? WHAT (what can I do)?
  - First...Airway, Breathing, Circulation
  - Then...
    - Patient - age, comorbidities
    - Trauma - what surgery? when? current anatomy?
    - Presentation - vitals & exam. evolution of symptoms. recent studies
- Load the boat: ask for help early, don't surprise your senior
  - The situation - I'm having trouble with patient X.
    - One liner. Vitals. Exam.
    - This is what I think is happening.
  - Here's what I'd like to do: testing. meds.
  - Agree on contingency plans with senior and follow up with the senior to let them know the outcome and/or results of the workup.

## Pain

- Consider:
  - Timespan: sudden? Gradual? Severity?
  - Dangerous: peritonitis, acute limb ischemia (notify senior STAT)
  - Compression - hematoma, bleeding, compartment syndrome (urgent!), infection (swelling).
  - Neuropathic - incisional.
  - Psych - anxiety
  - Baseline insufficient meds (home pain regimen?)
- Workup - vitals, exam
- Treatment: Oral - Tylenol, oxycodone, IV - dilaudid 0.2-0.5 mg IV q2h PRN

## Fever

- Consider
  - < 48 h post-op = atelectasis (wind)
  - > 48 h = phlebitis, PNA, UTI, leak (water)

- > 5 d = infection (wound)
- 1 week = walking (DVT/PE)
- > 1 week = allergy, transfusion rxn, septic pelvic thrombi, intra-abdominal abscess (wonder what we did/wonder about drugs)
- Workup - vitals exam, CBC with diff, cultures (urine, blood, sputum), CXR

### Chest pain

- Consider - Cardiac - MI, GI - GERD, MSK - incisional pain, costochondritis, Psych - anxiety
- Workup - vitals, exam, EKG, CXR, +/- ABG

### Tachycardia

- Consider: Neuro - pain. Volume - hemorrhage, 3rd space, sepsis. Cardiac - MI, CHF, arrhythmia, PE. Endocrine - thyrotoxicosis, pheochromocytoma
- Workup - vitals, exam, EKG

### Hypertension

- Consider: Chest pain? SOB? Home meds (restarted)? Neuro - pain, anxiety. Hypoxemia. Hypothermia
- Treatment
  - Labetalol 10 mg IV q6h PRN SBP over 160, hold for HR < 60
  - Hydralazine 10 mg IV q6h RPN SBP over 160, hold for HR > 90
  - Consider: nicardipine gtt

### Hypotension

- Consider
  - Tank - hypovolemia (fluids, bleeding)
  - Pump - cardiac failure, PE
  - Pipes - sepsis, anaphylaxis, adrenal insufficiency, **epidural induced vasodilation (common in post-op)**
- Timeline
  - Within hrs - hypovolemia due to un-replaced blood loss, residual anesthetic effect, pre-op meds, hypothermia, intra-op neurological event
  - More than few hrs - hypovol 2/2 continued hemorrhage, inadequate resuscitation, or third-spacing
- Workup - vitals, exam. Labs (lactate, lytes, cultures), CXR, upright KUB

### Atrial fibrillation

- Consider - HDS? Hx? Neuro status?

- Workup - vitals, exam (fluid balance), EKG, lab (lytes, TSH, +/- troponin)
- If NOT hemodynamically stable, get cards involved STAT, may need cardioversion
- Treatment (if hemodynamically stable)
  - First line, metop IVP 5 mg q15 min (max 15 mg)
  - Second line, dilt IVP 5 mg q5min (max 25 mg)
  - Consider amio gtt, dig

### **(New) Hypoxia/Dyspnea**

- Workup - vitals, exam, pulse ox, CPO, CXR, if mental status changes STAT ABG
- If < 92% = see patient right away
- Consider
  - Ventilation - OSA, BMI, COPD, home O2, obstruction, depressed resp drive, atelectasis, PTX, bronchospasm
  - Perfusion - volume status, PE
  - Difusion - PNA, fluid overload, ARDS
- Workup - vitals, exam, +/- ABG, CXR, albuterol, resp therapist

### **Nausea and vomiting**

- Make NPO, get KUB (upright) - think about ileus, SBO, delayed gastric emptying
- Meds
  - Ondansetron PO/IV 4-8 mg q8h (max 32 mg) - HA, constipation, QTc prolongation
  - Prochlorperazine PO/IM/iV 5-10 mg q6h - dystonia
  - Promethazine PO/PR/IM/IV 12.5-35 mg q6-8h - dystonia, anti-ACh
  - Metoclopramide PO/IV 5-10 mg a6-8h - dystonia, avoid in obstruction
  - Lorazepam, dexamethasone, haloperidol

### **Oliguria**

(goal = 0.5-1 mL/kg/hr; verify IOs)

- Consider
  - Pre-renal - volume status?
  - Intra-renal - baseline renal function?
  - Post-renal - Foley malfunction? Retention?
- Workup - vitals, exam, labs (lytes), test bolus