Welcome to the ED Orientation on-line module

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Goal of this Orientation

PREPARE OUR OFF-SERVICE ROTATORS FOR PATIENT CARE IN THE ED FROM THE MOMENT THEY START THEIR ROTATION

ED Rotation Orientation Process and Resources

- Mandatory
- ED orientation (mandatory): you are here
- ED online module (mandatory):
  - yaleem.org > Resident Portal >For off-service rotators
  - Password: yaleem

Objectives of this Orientation

- Logistics of working in the ED
  - COVID-19 Considerations
  - Your ED team
  - Sign out
  - Observations vs. Admission
  - EPIC details
    - Placing Orders
    - Writing Notes
    - Admission/ Discharge
  - Top off service resident Pitfalls and How to avoid them
- High Yield Emergency Medicine Topics
  - Cardiac Chest Pain
    - ACS: STEMI vs NSTEMI
    - Low/Moderate Risk CP
  - Anaphylaxis
  - Trauma
    - C Spine precautions
    - E Fast Exam
  - Intoxicated patient
  - Psychiatric patient
    - Medical clearance

LOGISTICS OF WORKING IN THE ED

COVID-19 Considerations

- PPE: we have it, it needs to be used appropriately.
  - Located in the PPE carts in each section in the ED, ask a nurse or your attending to help locate
  - Use ONE N95 (or equivalent mask) per shift
    - You should know the size: regular or small
  - Surgical masks: can be used to see non-respiratory complaints
  - Face Shield/Gloves/ Disposable Gown/ Hair cover are used for invasive procedures (including IV insertion, etc.)
  - P100 Masks are available in the ED to use for your shift. You must bring your own filters.
    - Ask a nurse or attending where to locate these masks
    - Must be returned at the end of your shift
  - A mask must be worn at all times when at work

COVID-19 Considerations

- Stay safe:
  - Never enter a patient room without appropriate PPE
- Stay adjustable:
  - Things change daily: administratively and clinically, the attendings and residents in the ED will be familiar with the most up to date information, please approach them with any questions

ED Layout

- Section A: Mixed Acuity- open 24/7
  - Staffing:
    - 2 attendings 9am-1am (1 attending 1am-9am).
    - Any off-service resident may be assigned to A side.
    - The off-service residents will present all patients to the PGY4 EM resident.
  - Trauma: All trauma patients that go to resuscitation bays are designated as "full" or "modified" trauma
    - Off-service residents are not responsible for taking care of "modified" or "full" trauma.
    - Off-service residents are responsible for trauma patients that don't meet "modified" or "full" trauma criteria.
  - Resuscitation Rooms- "R- Rooms"
    - Highest acuity patients go to these rooms.
    - Discuss with the PGY4 on A side which R rooms you should be designated to (generally R1 and R2), respond to these R rooms when the alert is made overhead.

ED Layout

- Section B: Mixed Acuity- open 24/7
  - May still get trauma patients that are not “full” or “modified” traumas
  - At least 2 residents, always at least 1 senior EM resident (PGY2-4)
  - Staff patients directly with the attending
- Section C : Boarding/Admitted Patients
  - You will not work any of these shifts
- Annex: Lower acuity
  - Staffed by APPS; you will not work any of these shifts
- Express Care: Lower Acuity- occasionally open during busy times
  - Located in the ambulance bay and hallway beds in A side
  - Staff patients directly with the attending

TRIAGE IS NOT A PERFECT SCIENCE- APPROACH EACH PATIENT AS IF THEY COULD BE VERY SICK

ED Layout- Other areas

- **Patient entrances/ triage/ registration** areas:
  - Ambulance
  - Waiting Room
- **Crisis Intervention Unit (CIU)** = Psychiatric ED
  - Separate unit staffed by psychiatry residents, attendings, nurses, techs
  - Prior to going there, patients >50yr old must be medically cleared
- **Chest Pain Center (CPC)**
  - Separate ED observation unit for low/moderate chest pain patients
  - Staffed by B-side attending, PA (during working hours), nurse, tech

Your team:

- Attendings
  - May be supervising multiple sections during one shift
    - Can be reached on mobile heartbeat if they are sitting in a different section
  - 24/7 in-house coverage
- Senior ED Resident
  - PGY4 resident always on A side
  - PGY2-4 on B side
- ED Nurse
- ED Technician
- Information Associate (IA)

Your ED shift: Arrival and Sign-out

- **Arrive at least 5 min. prior to scheduled time**
- A side: Group sign out at 7am, 3pm, 11pm located in the “bubble” by room A15
  - Senior residents will present patients
  - ”A Surge” residents sign out to each other or to the PGY4 they are working with and spend the last hour of the shift after sign out wrapping up patients and notes
- B side: Group sign out at 7am, 3pm and 11pm
  - Off service residents usually receive sign out from the outgoing off service resident. Discuss this among the residents before sign out
  - Attendings usually present patients, junior residents provide details as needed
  - If you are on a swing “surge” shift you can start picking up patients and sign out to a resident staying on B side if you have existing patients after your shift ends
  - After sign out, spend the last hour of your shift wrapping up your patients and finishing your notes.

Your ED shift: Seeing patients

- See patient in Parallel (not sequentially)
  - Ideally see them within the first 5 minutes of arrival
  - Present your patients as soon as you see them to senior (A side) and/or attending (B or A side)
  - Assign yourself to new patients that appear red within your section
  - When taking sign out on patients, assign yourself as the new resident caring for the patient

Your ED shift: Signing up for patients

- Sign into the ED context
  - "YNH Emergency Adult"
- Once in Epic, go to the ED Track Board and sign into the ED, at the end of the shift you can "sign out" using this button as well to unassign patients
- To assign yourself to a patient, click on the patient, right click then "assign me"

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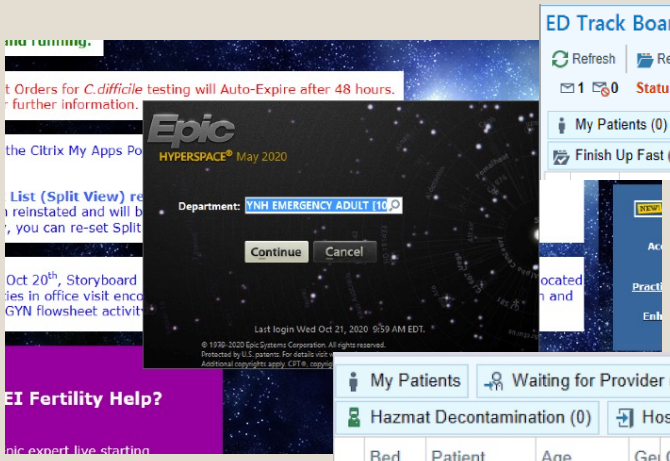

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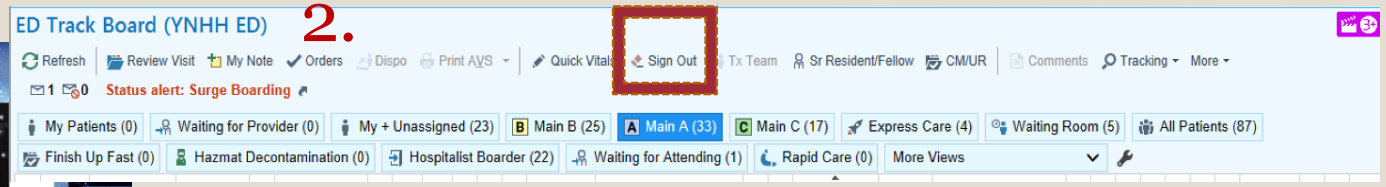

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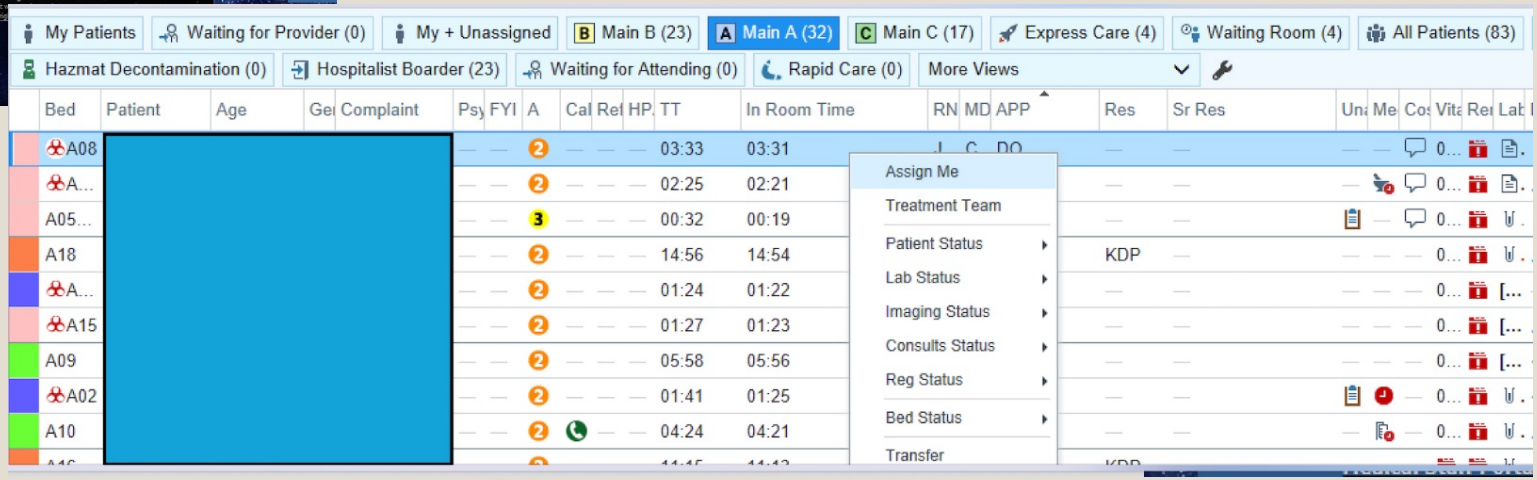
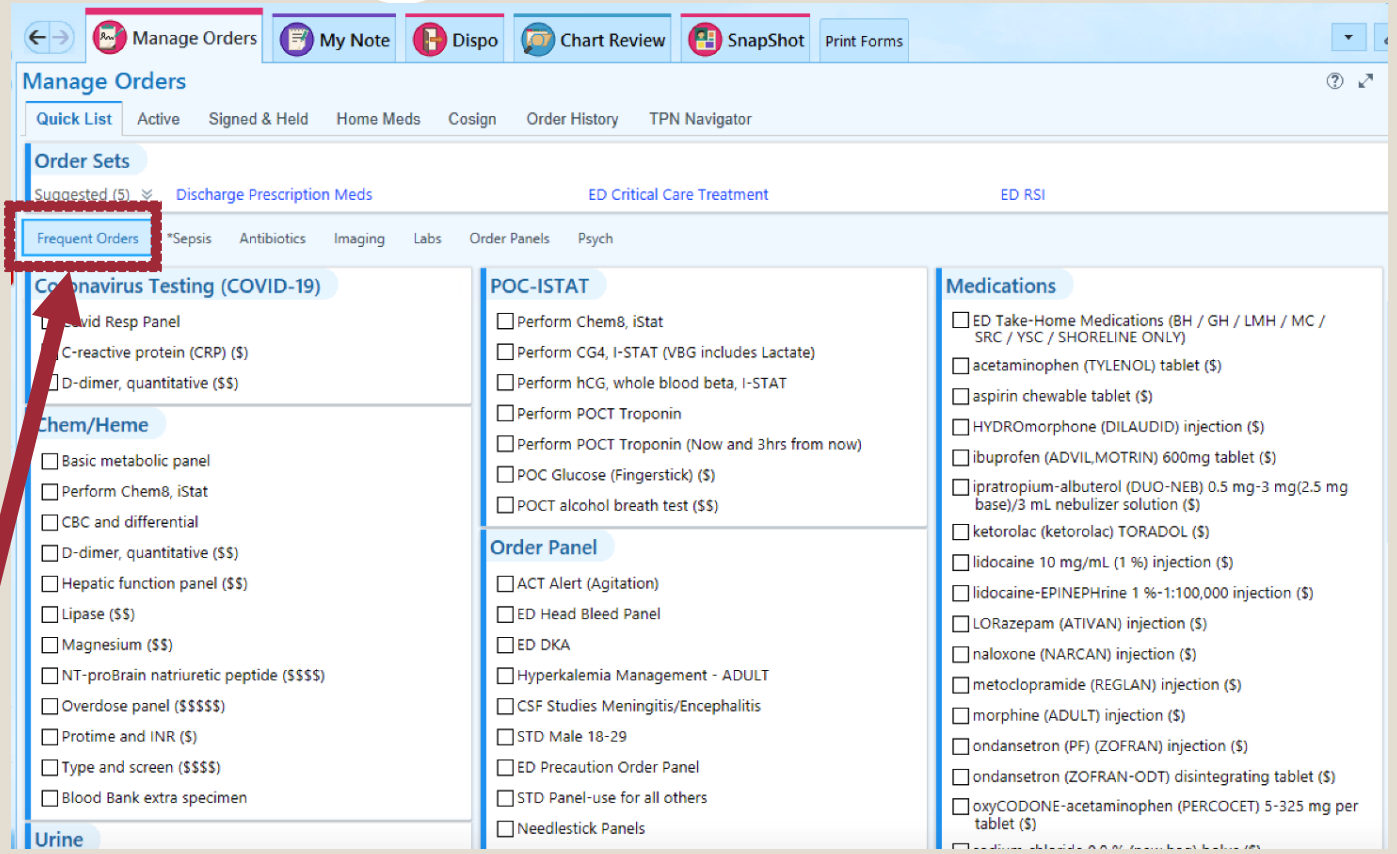


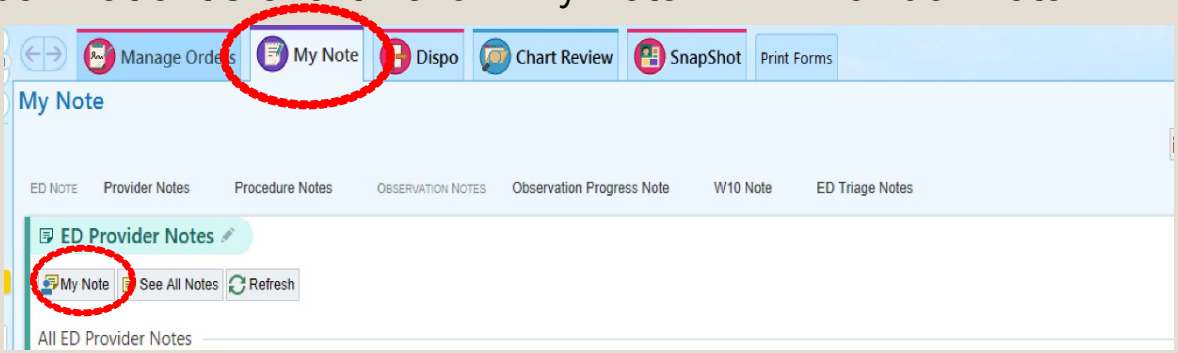
Your ED shift: Orders

- Discuss with you attending or senior resident before entering lab and imaging orders
- Use the ED “frequent orders for majority of labs, imaging and antibiotics to ensure you are entering the correct orders
- Enter orders ASAP



Your ED Shift: Notes

Open Patient's Chart> Click "My Note"> ED Provider Note

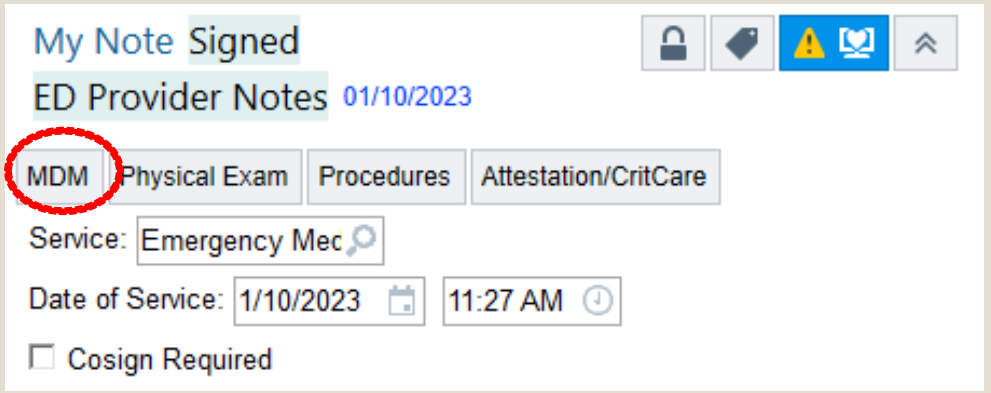


As of January 1st, 2023: **THERE ARE NEW CODING GUIDELINES!!!**

There are no longer HPI and ROS elements that must be completed in every note

Coding is now based off the MDM which is now emphasized in our documentation

The MDM is free text



Your ED Shift: Notes

In the MDM, please include:

- The patient's PMHx and presenting story (HPI)
- DDx you are likely considering (i.e., for a CC of chest pain-> ACS, PE, or PNA, etc.)
- Tests you are considering or deferring for the most emergent Dxs (i.e., considered PE but patient was low risk per PERC criteria, no d-dimer ordered).
- Updates and/or changes to patient status:
  - Improvement after meds?
  - Worsening vitals
  - Final disposition
  - Etc.

AVOID laundry list differential without a plan mapping to the problem

- "Concern for X, Y, Z. Will give lidocaine patch."
  - Cannot tell if you were really ruling out or ruling in that whole differential

Instead

A relevant differential

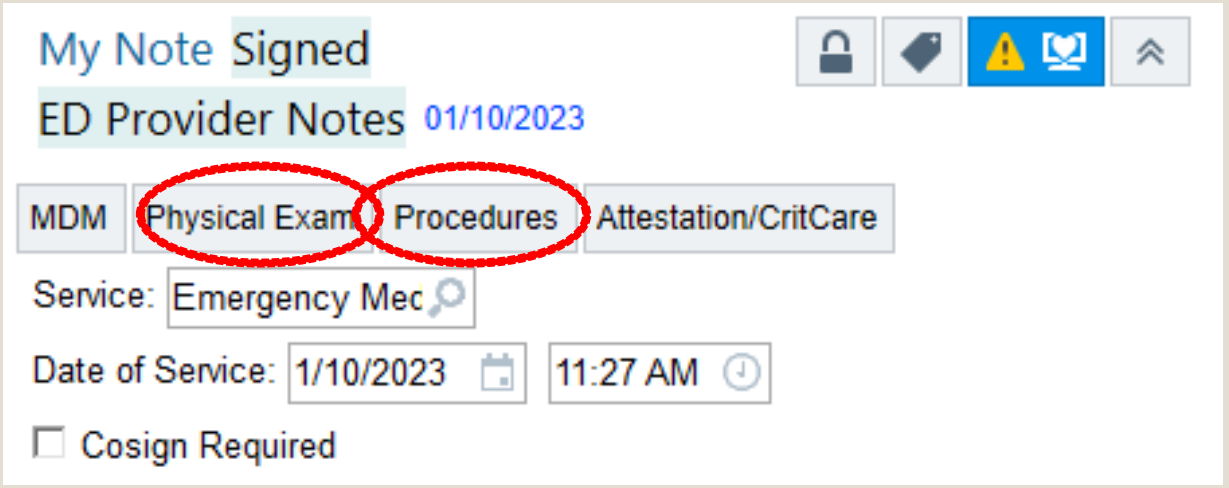
- "Concern for X, plan for Y" where X is a potential life threatening problem

IF YOU HAVE MDM QUESTIONS, ASK YOUR SENIOR OR ATTENDING

Your ED Shift: Notes

Include a physical exam

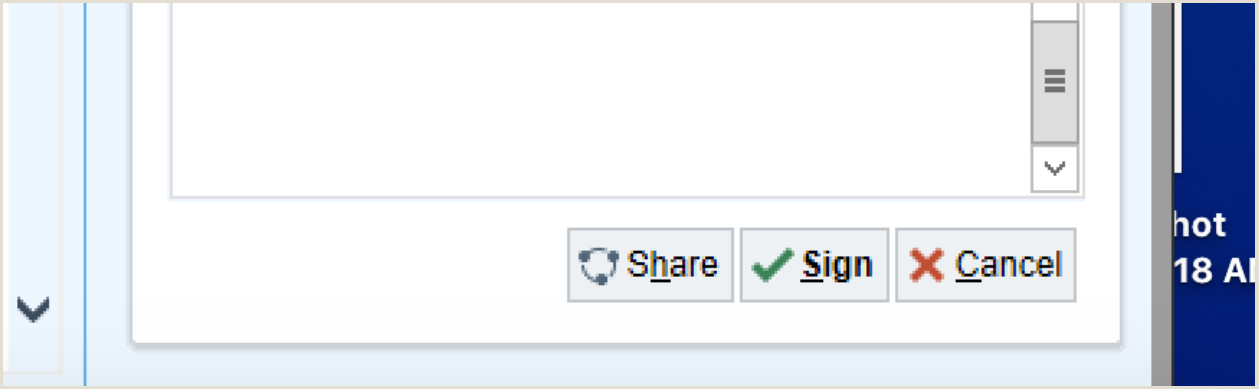
If you did any procedures use the procedure tab



You do NOT need to write in the “Attestation/CritCare” section (attendings will document there)

Your ED Shift: Notes

- When Finished Documenting: Share
- When an attending has signed the note, the system will only let you “sign” the note
  - Pick your attending co-sign
  - Do not start 2 separate notes



Your ED shift: Disposition

- Important to notify the patient and nurse as soon as the decision is made to admit or discharge
- NEVER discharge the patient prior to making the ATTENDING AWARE that the patient is being discharged
- AMA discharge: ALWAYS alert the attending ASAP
  - Document capacity to make decision
    - Can not be: intoxicated, mentally retarded, cognitively impaired
  - Give appropriate discharge instructions and prescriptions
  - AMA form must be signed by patient
  - Encourage return to the ED

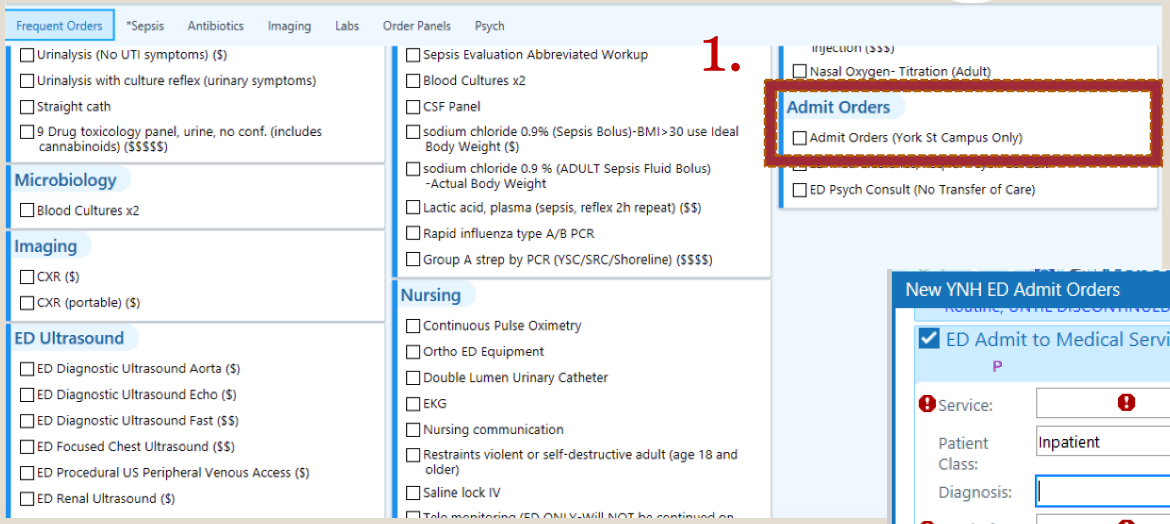
Your ED shift: Admission vs. Observation

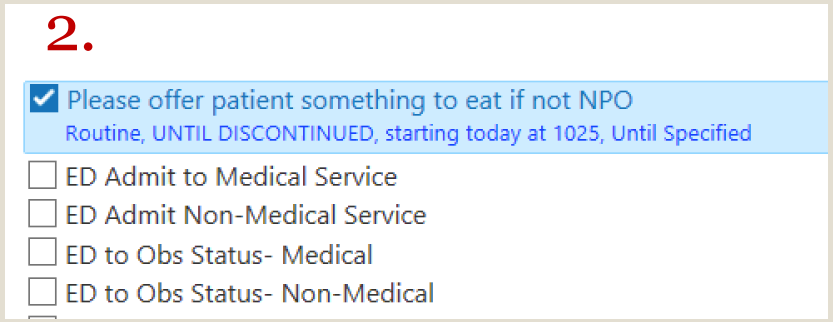
- Reasoning: patients who have normal vital signs, normal lab results, normal imaging may not meet criteria by insurance companies to pay for a full hospital admission
  - These patients may still require medical care not reflected by the criteria
- Logistics: most of the time, the ED attending will be able to determine admit vs. obs
  - Care Coordinators are specially trained in making the decision
    - Will sometimes ask you to change the admit→obs or obs→admit booking
- The attending makes the final decision

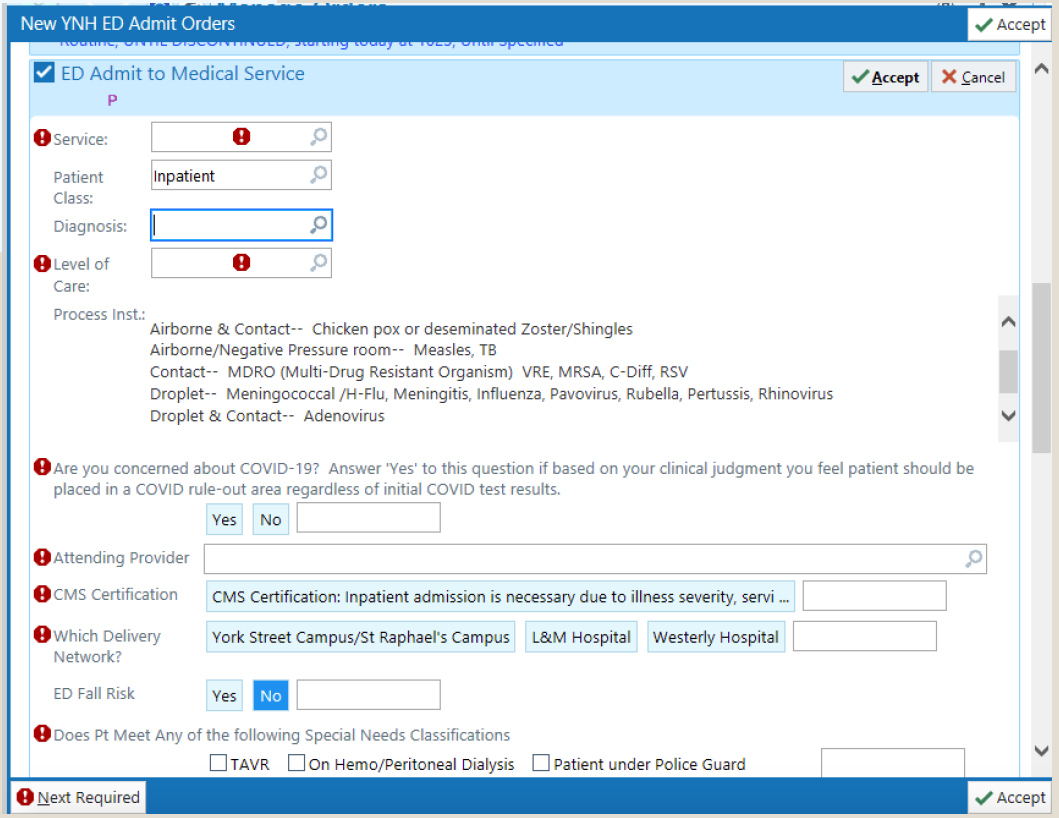
Your ED Shift: Medical Admission

- Enter order in EPIC: “ED Admit” under frequent orders
  - Observation vs. Admission
  - Medical Admission
    - For Attending:
      - “YNH Hospitalist” for general medical admissions
      - If cardiology, the cardiology fellow will give you the name of the attending
      - For Klatskin, call the Klatskin admitting resident signed into the dynamic role on mobile heartbeat to get the name of the attending
  - Non-Medical Admission
    - Surgical Services (including OB/GYN), Neurology
    - Need a specific attending name from the consulting resident to put into the order
  - Level of Care
    - ”Floor” for most admissions
    - Step down and ICU admissions require a specific attending name
  - Fill out the rest of the booking (specify tele vs. floor)

Your ED Shift: Admission





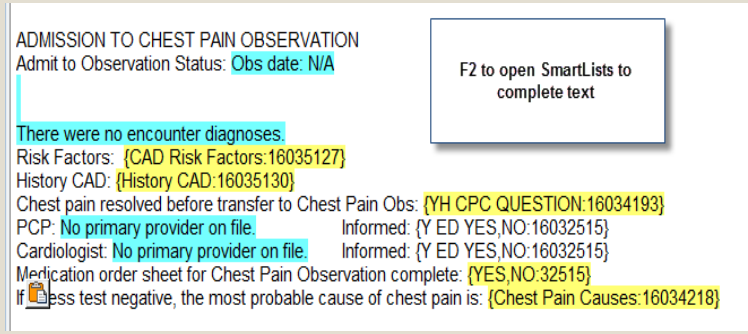


Your ED Shift: Admission to an ICU

- YNHH admission policy: the ED attending makes the final decision where a patient is admitted
- The attending or senior resident will contact the MICU or SDU attendings to discuss admissions
- Additional ICUs
  - CCU: page CCU fellow
  - Surgical-ICU: the surgical team is responsible for getting SICU attending approval
  - Neuro-ICU: don't need to page anyone b/c you are admitting to a team that should already be involved in patient care

Your ED shift: Admission to CPC

- CPC or in-hospital ROMI
  - Both:
    - low/ moderate risk chest pain patients who need a ROMI
    - Observation, telemetry admission
    - Not for ACS patients
      - No nitro drips, no heparin drips
  - CPC: patient will get Stress Test at the end of their admission
    - Your role
      - Place appropriate EPIC order:
        - ED chest pain→ place in CPC observation
      - EPIC Note:
        - Smartphrase: ".edobsadmit"
      - Order all out-patient medications
      - Dictate
  - In-Hospital ROMI: most will NOT get a stress test
    - Patient had a stress in the past year
    - Patient with other diagnoses possible (other than CAD)
    - Patient needs isolation
    - Patient morbidly obese (will not fit stress table)
    - Patient can not self-transfer (onto stress table)

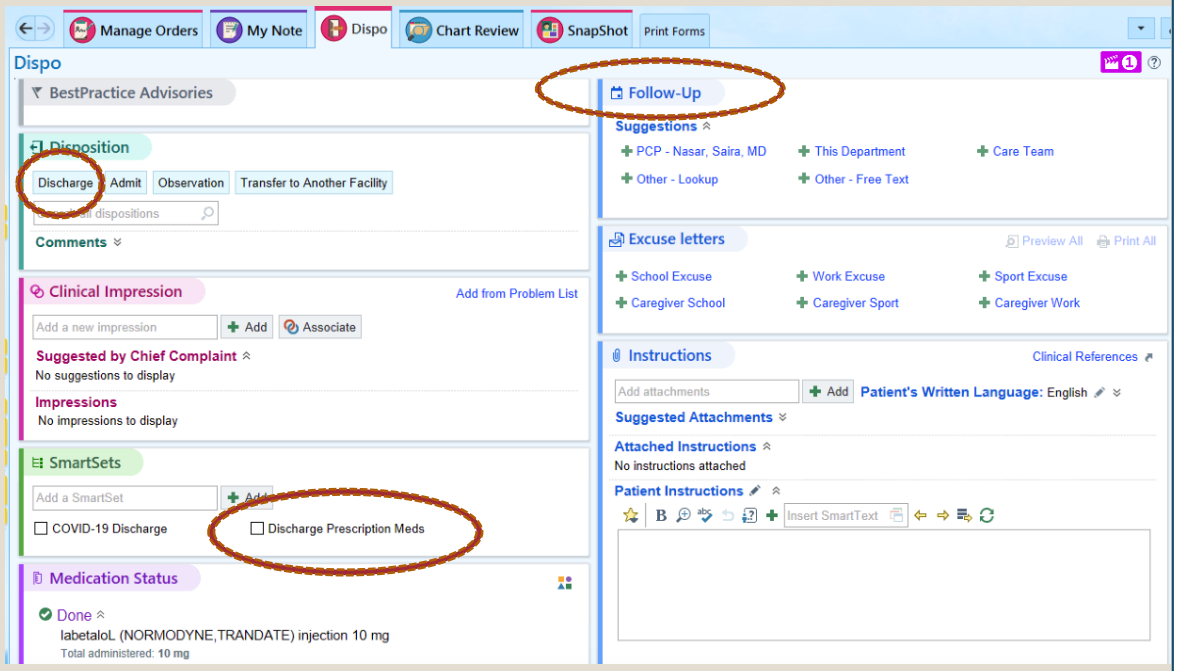


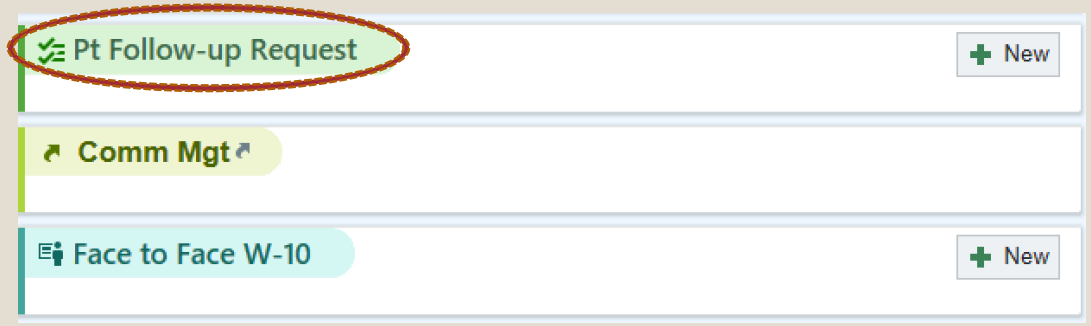
Your ED shift: Placement in ED observation

- ED obs
  - Generally used for patients who will likely not need to be admitted but are waiting on a single time-consuming thing (MRI, placement in SNF by care coordination, etc)
    - Your role
      - Place appropriate EPIC order:
        - Place in ED observation
        - EPIC Note smartphrase: ".edobsadmit"
      - Order all out-patient medications
      - Call the APP taking care of ED obs patients (will be the one assigned to other ED obs patients in the annex), tell them about patient and what plan is (i.e. what they are waiting on before discharge)
      - Patient will then be transferred to the Annex for their observation period

Your ED Shift: Discharge

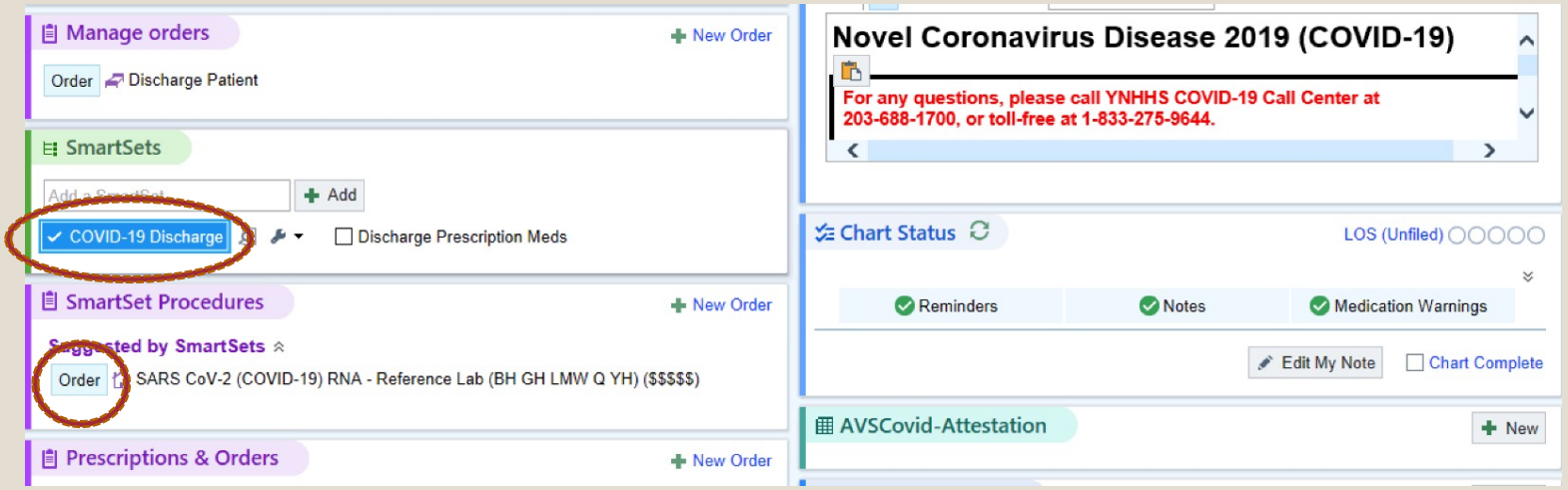
- Open “Dispo” Tab
- Click Discharge
- Enter Clinical Impression (diagnosis)
- Follow up-Click Appropriate MD
  - For a specific specialty service, type in ”ED Referral” to see the list of specialties that we can refer to. This will ensure the correct number and address is given to the patient
- Orders=Discharge Prescriptions
  - Use the Discharge Prescription Meds Tab to select common prescriptions
- Free Text Discharge instructions in the blank box
- Patient Follow up request
  - Fill out this section for a follow up nurse to call the patient to help arrange outpatient care (including setting up a primary care doctor)





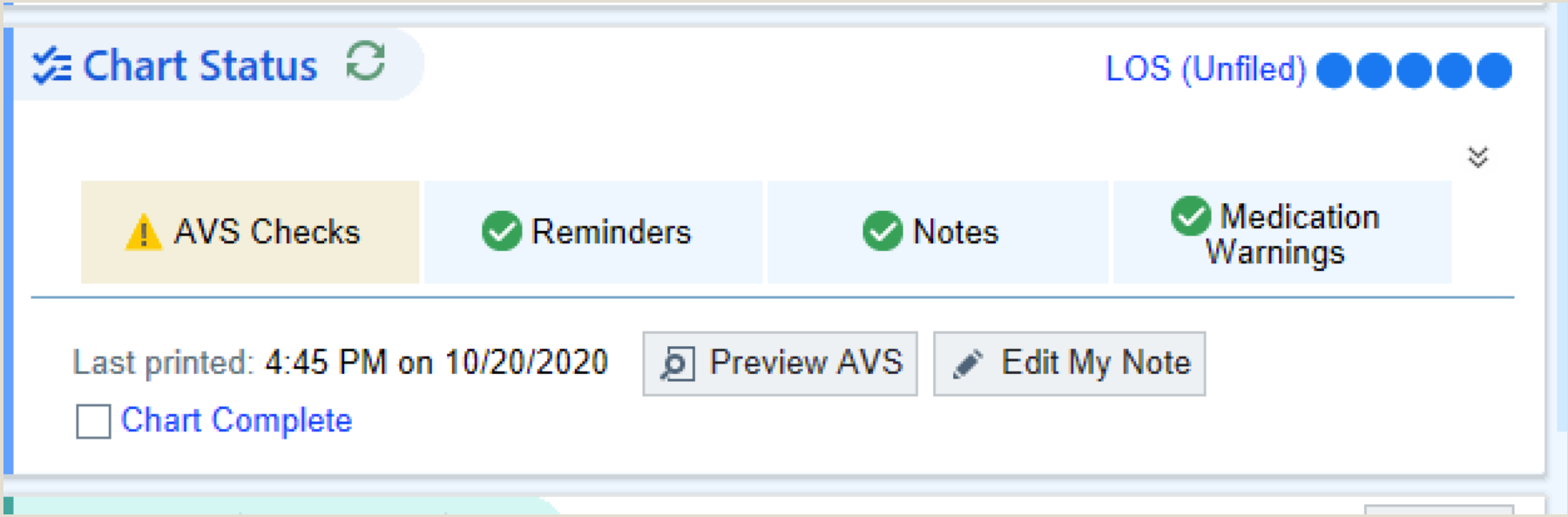
Your ED Shift: Discharge

- To order an outpatient Covid-19 test
  - Click COVID-19 Discharge> Click “ORDER” SARS-CoV-2 test
  - COVID-19 Discharge instructions will auto-populate
- Once this order is placed, the patient will receive a phone call after discharge to schedule a COVID-19 test
- For patients with pending COVID-19 tests or people you are ordering an outpatient COVID-19 test, do not provide a work note. They can get a work note from the follow up office or their primary care provider.



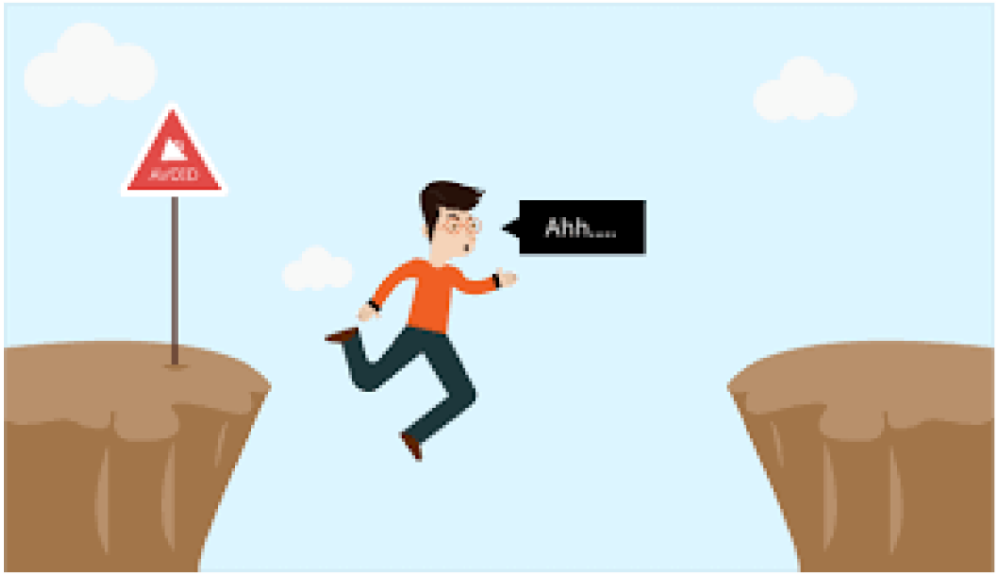
Your ED Shift: Discharge

- When Ready to Discharge, Click Preview AVS then Print
- Hand discharge papers to patient or to nurse



Other ED Pearls

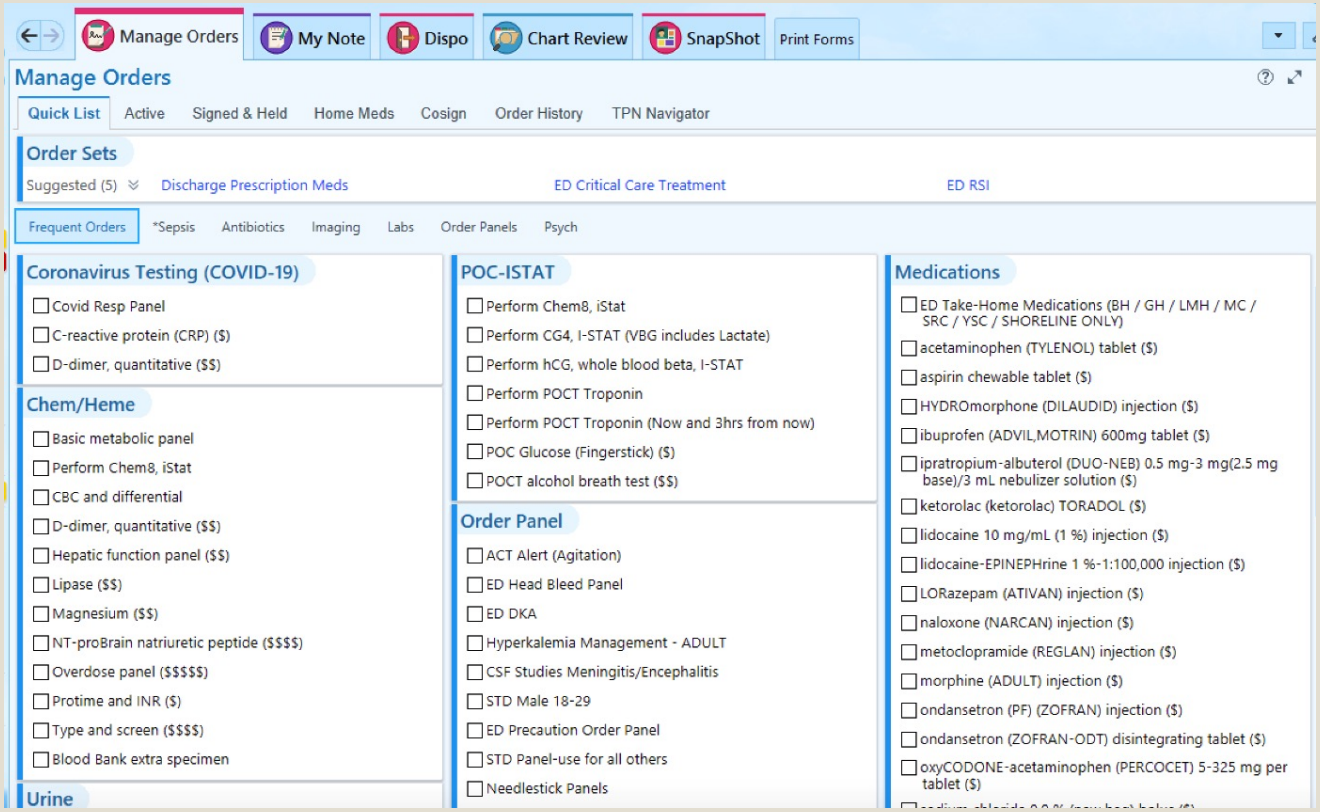
- COMMUNICATION IS CRITICAL
  - Team-work is essential to surviving in the ED (both patient and resident): greatest off-service resident pitfall is not communicating with the nurses and attending/senior
  - Let your senior/ attending know:
    - Patient seems to be sicker…
      - than triaged
      - than last time seen
      - than signed out
    - You are feeling overwhelmed and are falling behind
    - You need a break (nourishment/ bodily functions)



Common Off-Service Resident Pitfalls- and how to avoid them

Common Order Errors

- Use the frequent orders tab! This will avoid many lab and imaging errors.



Common Lab orders

- Sexually Transmitted Infections
  - Order GC/ Chlamydia/Trichomonas as a BUNDLE
  - Use Order set
  - Do not send genital cultures for BV- treat based on symptoms
- Urinalyses
  - 2 available orders as “UTI symptoms” or “No UTI symptoms”
    - “no UTI symptoms” we NEVER GET A CULTURE

ED Referrals

- To refer a patient to the correct outpatient clinic when discharging:
  - Dispo Tab
    - Follow-up section
    - Type “ED REF”
    - Pick correct service/ clinic
- DO NOT pick YHP (yale health plan) options if patient is not a YHP patient
- Phone number should never be 633-4242 (main hospital number)

Safe Discharge

- Make sure the patient knows:
  - What their diagnosis is/ is not
  - What the patient needs to do
    - Pick up medications (confirm best pharmacy and make sure open when needed)
    - Follow up with Dr. X
    - Wound care, suture removal, etc.
    - Why the above is important
- Follow-up Requests for anyone you feel needs to be “checked on” or will need help navigating healthcare
  - They will also be calling them with abnormal test results automatically, so no need to flag for this
  - Follow-up office is available 6am-4pm daily and can be reached with questions in real time at 203-688-1051
- Ortho: follow-up attending should be the one on call at time the patient arrived in ED unless told otherwise be consulting resident.

The ED Patient with Chest Pain

Chest Pain: Background

- 5% of all ED visits = 5 million visits per year in the US
- One of the highest-risk chief complaints
  - For patient morbidity/ mortality
  - For MD litigation
- Wide differential- most is high mortality. IN THE ED, WE MUST THINK OF WHAT WILL KILL THE PATIENT
  - Acute Coronary Syndrome
  - Pulmonary Embolism
  - Aortic Dissection
  - Pneumonia
  - Pneumothorax
  - Pericarditis
  - Esophageal Rupture

ACS: STEMI=CATH LAB ACTIVATION

- National guidelines for STEMI cath lab activations:
  - Door-to-EKG: 10 minutes
  - Door-to-balloon: 90 minutes
- All EKGs seen and interpreted by an attending immediately
- "Cath Lab activation" is done by ED attending
  - Cath lab personnel are assembled (if not in-house overnight)
  - Cath lab attending gives a call to the ED attending to get quick story
- NO role for… prior to activation:
  - Cardiac enzyme results
  - Cardiology Fellow consult
  - Chest x-ray results
- Patient needs to be rolling to the cath lab within 25 minutes from arrival at ED triage, having gotten:
  - ASA 325mg
  - Plavix/ Ticagrelor (Brilanta) 180mg PO
  - Heparin 5000U
  - +/- Oxygen
  - +/- morphine
  - +/- nitroglycerin
  - +/- Beta-blocker

ACTIVATION IS BASED PURELY ON EKG and PATIENT'S PRESENTATION

ACS: STEMI=CATH LAB ACTIVATION

- What does the attending look for to activate cath lab?
  - Activation Criteria
    - ST elevations of >1mm in 2 consecutive (anatomical) leads
  - Other signs that may be present (but not part of criteria for activation)
    - Dysrhythmia
    - Reciprocal changes
    - Dynamic changes
    - New LBBB

ACS: “Good Story”

- What if the EKG is not clear-cut, but the patient is giving a “classic MI story”
  - No immediate cath lab activation: role of cardiology consult
    - Resident calls fellow
    - Attending calls attending
- Instruct the nurse to do q10min. EKGs
  - Dynamic EKG changes→ activate cath lab
- Possibilities for ACS: all should get heparin
  - Good story – EKG changes – troponins = unstable angina/ ACS
  - Good story – EKG changes + troponins = NSTEMI/ACS
  - Good story + EKG changes (+/- troponins) = STEMI/ACS
    - Especially if came in first few hours (<6 hours)
- Bad story/ no CP – EKG + troponins= NOT ACS
  - Look for other causes of troponins
    - ESRD
    - Tachycardia/ Sepsis
    - Myocarditis

Chest Pain Patient Disposition

Low/Moderate Risk CP

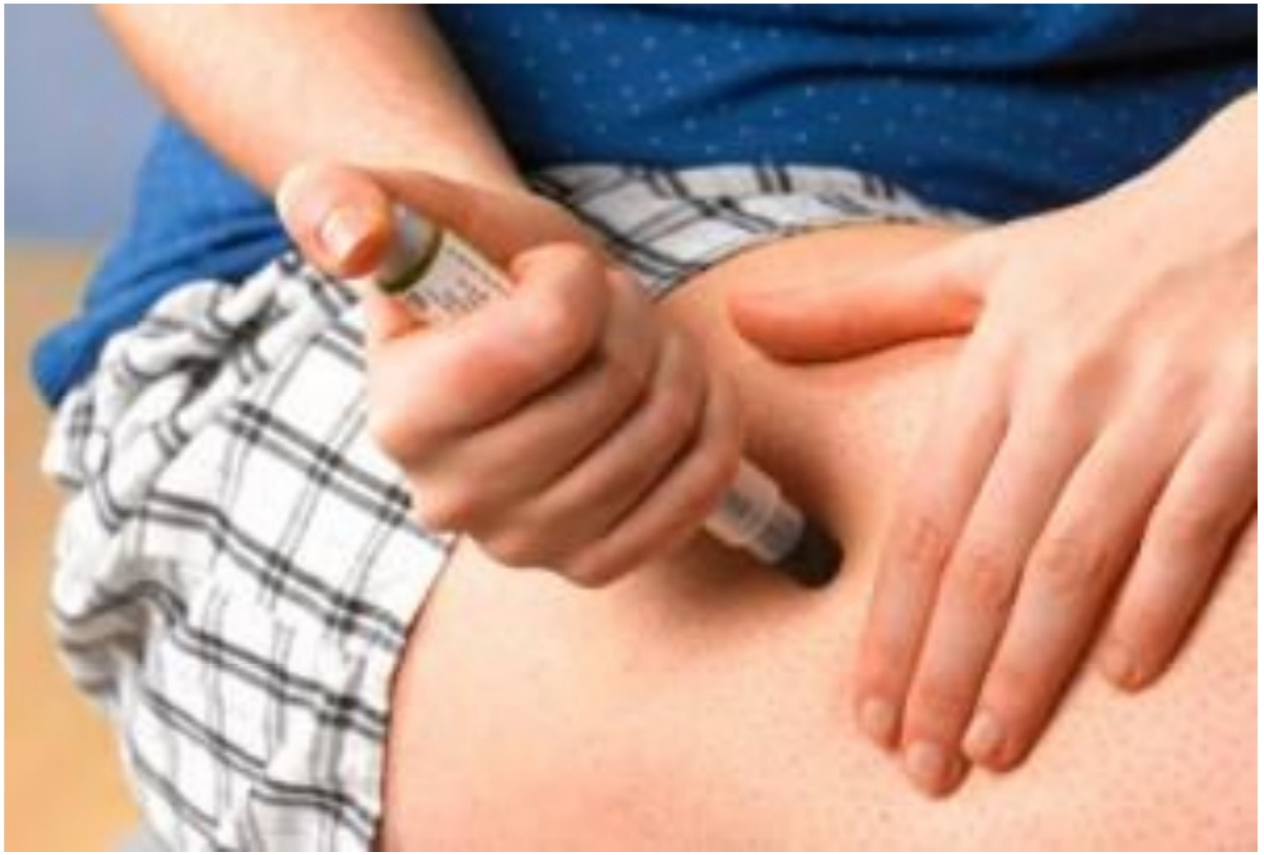
- ED chest pain pathway helpful for guidance (i.e. what to do next based on high-sensitivity troponin results)
- Need a ROMI
  - EKG and enzymes q3-6hrs x 3 times +/- stress
- In-hospital ROMI vs. CPC
  - Decision made by ED attending in consultation with cardiologist and PMD

High Risk CP

- ACS
- Heparin gtt
- Unstable vital signs
  - Cardiology team
    - Goodyer / General Cardiology
      - telemetry
    - CCU/CSDU

Cocaine Use Chest Pain

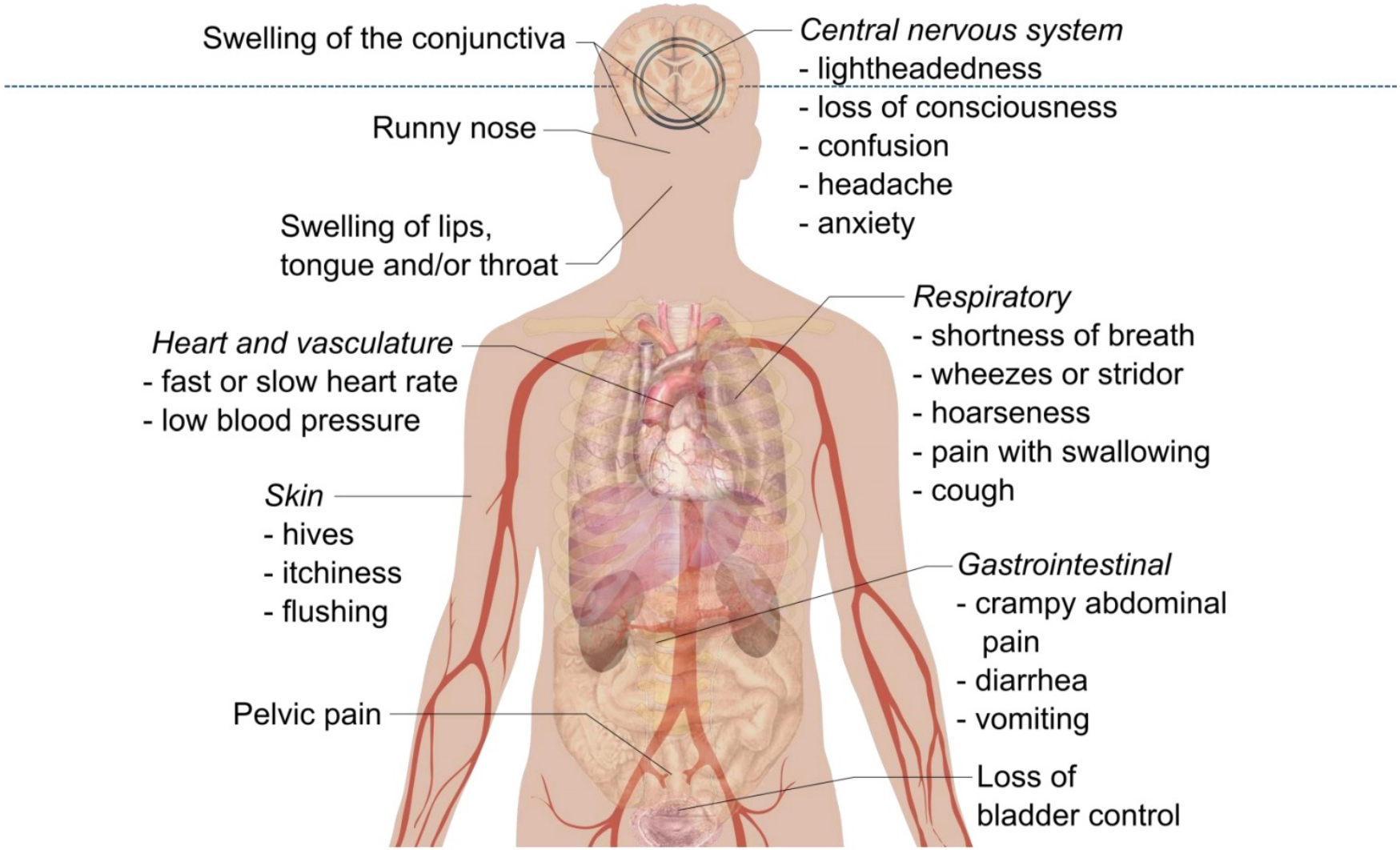
- Rule in approx. 6% of time
- Avoid Beta-Blockade
- Treat chest pain and/or tachycardia with benzodiazepines



The ED Patient with Anaphylaxis

Signs and symptoms of

Anaphylaxis



Anaphylaxis/Angioedema

- Immediate Medications
  - Epinephrine:
    - Mild- moderate: 0.3mL of 1:1000 dilution IM in thigh
      - May repeat q5min. Up to max 3 doses
      - EPIPEN
    - Severe: 1-5mL of 1:10,000 IV drip over 10min…continuous
  - Solu-Medrol 125mg IV
  - Benadryl 50mg IV
  - Pepcid 20mg IV
  - Fluids
  - Albuterol PRN

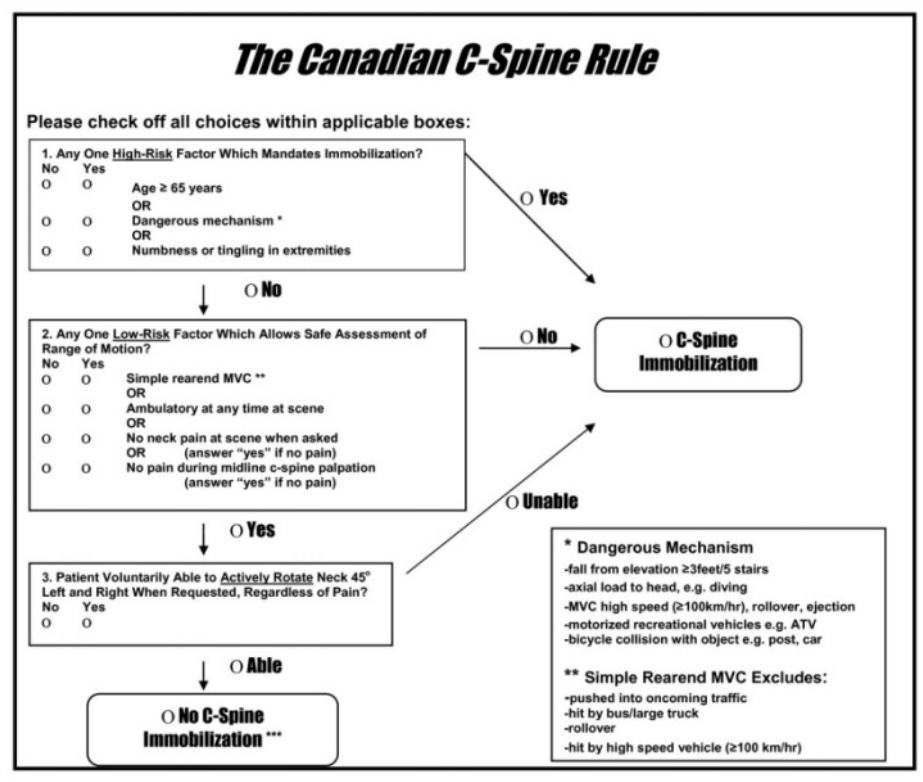
The ED Trauma Patient

The Trauma Patient

- There are triage criteria for activating “trauma alerts” for patients: “full trauma” vs. “modified trauma”
  - You are responsible for those who didn’t meet criteria THIS DOES NOT MEAN THAT THEY ARE NOT SERIOUSLY INJURED
- Most have c-spine collars
  - Never remove a c-collar without attending approval/clearance
  - Don’t allow a patient to remove a c-collar

Clearing a C-Collar

- Done by senior resident/ attending ONLY
- Clinical Rules for clearing C-collars
  - Canadian
  - Nexus – cannot clear if:
    - Midline tenderness
    - Focal neurological deficits
    - Altered level of consciousness
    - Intoxication
    - Distracting Injury



Trauma ABCDE's

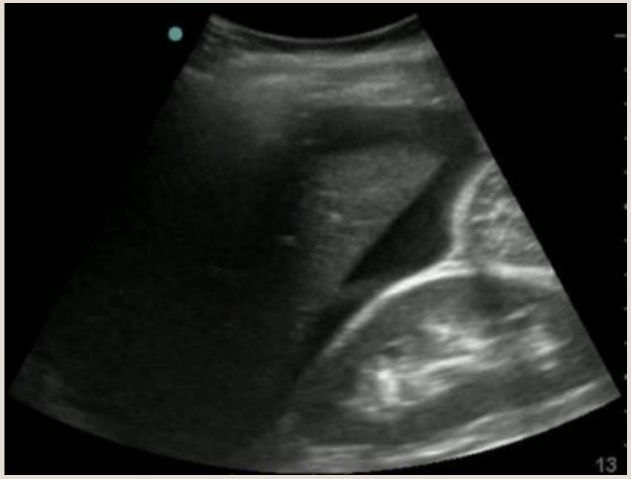
- Airway
- Breathing
- Circulation
- Disability (GCS)
- Exposures

Response	Score
Eye opening	
Opens eyes spontaneously	4
Opens eyes in response to speech	3
Open eyes in response to painful stimulation (eg, endotracheal suctioning)	2
Does not open eyes in response to any stimulation	1
Motor response	
Follows commands	6
Makes localized movement in response to painful stimulation	5
Makes nonpurposeful movement in response to noxious stimulation	4
Flexes upper extremities/extends lower extremities in response to pain	3
Extends all extremities in response to pain	2
Makes no response to noxious stimuli	1
Verbal response	
Is oriented to person, place, and time	5
Converses, may be confused	4
Replies with inappropriate words	3
Makes incomprehensible sounds	2
Makes no response	1

- Document all injuries and formulate a plan for intervention/imaging if necessary

FAST Exam

- Focused Assessment by Sonography for Trauma
  - Ultrasound exam looking for free fluid
    - Abdomen: RUQ/ LUQ
    - Pelvis
    - Pericardial Effusion
- E-FAST: extended FAST
  - Examines for pneumothorax
  - More sensitive than supine x-ray
- Validated in unstable patients
  - Can not be used to exclude intra-abdominal trauma



“Pan-Scan”

- “Pan-scan”= CT scan
  - Head (no contrast)
  - C-spine (no contrast)
  - Chest/ Abdomen/ Pelvis with IV contrast
  - T-/L- Spine reconstructions

More Trauma Pearls

- Laceration/ Abrasion
  - Tetanus
  - Contaminated wound: ?Antibiotics
- Beware
  - Intracranial hemorrhage
    - Old people: subdural/ intraparenchymal bleeds
  - Splenic lacerations
    - Immediately alert the attending for any vital sign abnormalities or changes in mental status
  - Vital Signs
    - Narrow pulse pressures
    - Mild tachycardia
- Cause of trauma: mechanical vs. medical

Actual or Relative Hypovolemic Shock

Class	I	II	III	IV
Blood loss	Up to 750 mL	750–1500 mL	1500–2000 mL	>2000 mL
Blood loss (% BV)	Up to 15%	15–30%	30–40%	>40%
Pulse rate	<100	>100	>120	>140
Blood pressure	Normal	Normal	Decreased	Decreased
Pulse pressure	Normal or increased	Decreased	Decreased	Decreased
Respiratory rate	14–20	20–30	30–40	>35
Urine output	>30 mL/h	20–30 mL/h	5–15 mL/h	Negligible
CNS/Mental status	Slightly anxious	Mildly anxious	Anxious and confused	Confused and lethargic

The Intoxicated ED Patient

Intoxication

- Need to be screened for other causes of their altered mental status
  - Hypoglycemia
  - Head trauma
  - Other toxic ingestions
- At minimum:
  - Vital signs
  - Point of Care Blood Sugar
- Consider whether any further testing would change management or disposition
  - Most cases will not need serum overdose/ urine tox
- Document suicidal or homicidal ideation
- Re-evaluate after clinical sobriety
- Detox Counselors- Project Assert

Intoxicated Patients

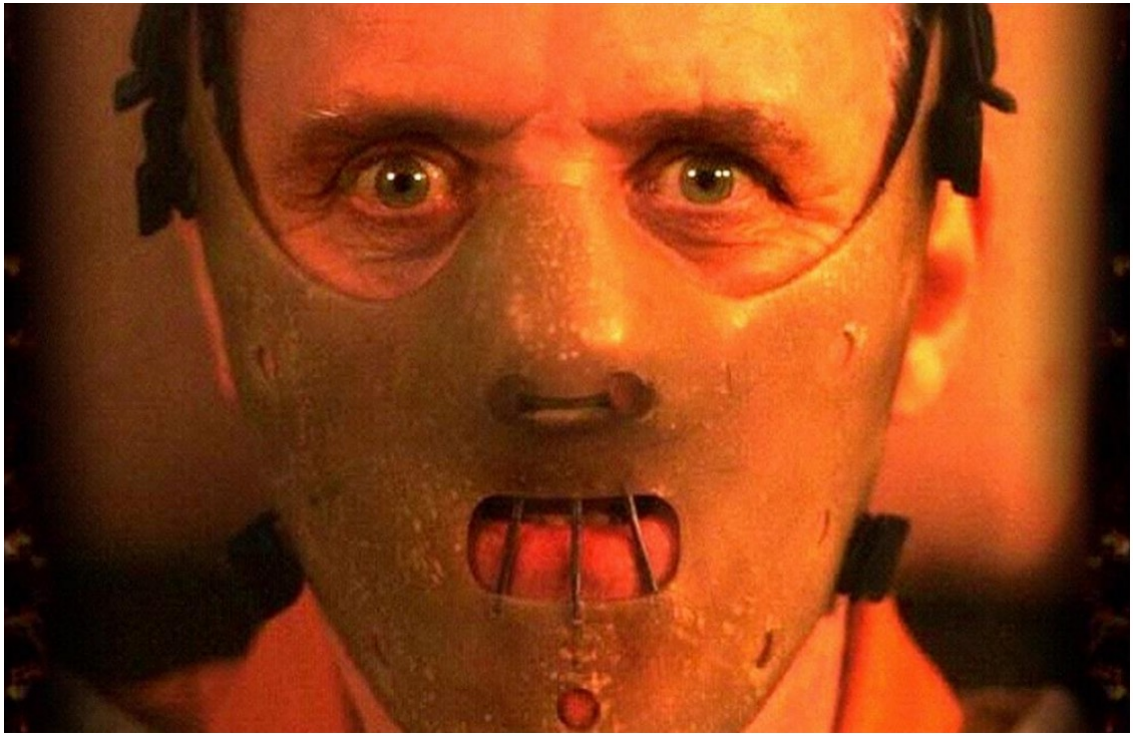
- Clinical sobriety: no slurred speech, normal gait
- Alcohol levels decrease by ~ .025/ hour
- Look over all documents in patient's chart
  - Police "paper"
    - Requires "physician clearance"
  - Nursing/ triage/ call-in sheets
- If medical evaluation is negative, and patient is intoxicated, must hold until clinically sober

Overdose: Physical Exam

- Vital Signs
- Pupils
- Pulmonary Edema
- Skin
- Bowel Sounds
- Mental Status

Overdose

- Document suicidal/homicidal ideation (SI/HI) on all overdose/ intoxicated patients
  - SI/HI must be re-assessed when clinically sober
  - Consider overdose in any patient with SI
  - Poison Control 1-800-222-1222 must be called for all ingestions/ overdoses (other than street drugs/ etoh)
    - On-call toxicologist is available 24hr
  - Get EKG
  - Consider overdose labs: Serum tox, LFTs, Utox



The ED Patient with Psychiatric Compliant or Ingestion

Medical Clearance

- Patients going to CIU require medical clearance if
  - Over 50yo
  - Has any medical PMHx
- What needs to happen:
  - Full physical exam
  - Consider overdose
- Some may need: EKG/ CXR/ Basic Labs
- Medical clearance means:
  - All medical problems resolved
  - No IVs in
  - Medically stable
- Overdose patients are not medically clear if the overdose is still being addressed
- Check past charts
  - Psychiatric patients may not be forthcoming with their PMHx
- Once cleared:
  - Epic order “psych clearance”
  - Alert patient’s nurse for CIU transfer to take place

THANK YOU FOR YOUR ATTENTION

Questions/Concerns?
Please contact the EM Chiefs
Or
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