DENVER HEALTH EMERGENCY MEDICINE™

Orientation Shifts: CDU New Hire

WEEK 1	**Day 1**	**Shadow shift in CDU**
	Day 2	**CDU 2-3 patients at time**
	Day 3	**CDU 2-4 pts at a time**
WEEK 2	**Day 4**	**CDU 3-6 pts at a time**
	Day 5	**CDU 3-6 pts at a time**
	Day 6	**CDU 3-6 pts at a time**

Supervising MD Expectations:

Supervising MD will see all patients that APP orientee cares for, and will co-sign all documentation. Attending may attest as is appropriate.

APP Expectations:

APP will focus on thorough patient care, documentation completion, and task completion, over high volume of patients. APP can see more patients when in agreement with supervising MD. APP will complete documentation on shift, and prior to going home.

ORIENTATION EDUCATION

Day 1

Shadow Shift in CDU

Goals	Shadow Shift Tasks	Measurable Outcome	Date completed
Observe patient care and flow in CDU, following the CDU APP. Become familiar with CDU room layout, equipment, location of equipment in CDU.	-Discuss APP role in CDU -review provider note in Epic, possibly chart as per shadow shift flow allows (refer to "All things CDU" document in drive) All things CDU WORKING DOCUMENT -discuss the daily morning rounds with nursing and social work - Rounding with AM CDU provider or medicine if not one -sign out to CDU providers at the end of shift. -Review equipment location in CDU (suturing materials, supply room, neuro testing tools, lubricant, butterfly US etc)	Orientee will be able to describe the approach to documentation in CDU (Pathway versus ED OBS)	
		Orientee will listen to other APPs present patients and compare/contrast to video.	
		Orientee may present patients and get feedback for presentations	
		Orientee able to locate important CDU materials such as supply room, butterfly US, neuro testing tools etc.	
Identify two diagnoses, tests, or physical exam component to review	-APP will identify two learning opportunities, which can be a diagnosis, test, or part of a physical exam and will keep track of these and MRN for self study	APP able to state the two learning points and discuss and describe on their next CDU shift with attending and/or APP.	
		APP will create log (electronic or paper) to track pt cases.	

Learning and Clinical Tasks

CDU pathways vs ED OBS, CODE STATUS, MED RECONCILIATION, DISPOSITION PLANNING, PT IN CDU

Goals/ Learning Topics	Learning and Tasks	Measurable Outcome	Date completed
Discuss CDU approach to pathways	-Orientee will discuss differentials, workup, dispositions for all patients with attending and CDU APP -review all pathways HOME | DH CDU, specifically exclusion and inclusion criteria -Co-morbidities to consider (renal failure and medication choices, DM and steroids, DM and NPO for some reason, HTN, CAD, history of GI bleed with NSAIDS, those on anticoagulation)	Orientee will begin to be able to state appropriate management of pathway patients and their comorbidities .	
		Orientee will explore references for creating a differential.	
		Watch videos and reflect about how we think and talk about EM patients is different and similar to hospitalist/CDU patients.	
CODE STATUS	-To be reviewed on every single patient accepted to the CDU. Refresher on code status, MOST paperwork, etc. Advanced Directives, MOST - most patients come in with these forms either already completed or in the chart, but if not then can be completed by CDU provider if patient has medical decision making capacity	Describe differences between MDPOA, Guardians, Living wills vs MOST orders	
MEDICATION RECONCILIATION	How to physically do the med rec is highlighted in the ALL THINGS CDU document All things CDU WORKING DOCUMENT Considerations regarding specific medications: - anti-hyperglycemics in NPO patients (use ISS instead) - BB prior to stress testing	Describe specific medications that should be restarted or held while in the CDU. Demonstrate how to complete the medication reconciliation at both admission and discharge.	

	- Blood pressure medications - aspirin/blood thinners		
Documentation	-Review other APP and MD documentation for pts in CDU	The Orientee will review at least 4 other providers' documentation.	
Primary patient care and disposition planning	**Respite** – hotel like living with 3 meals a day, appropriate for those who are independent in ADLS, no drug use, ETOH use **Shelters** – resources on shelter from social work **Subacute rehab** – Usually requires PT evaluation prior to referral, access depends on insurance benefits. **Acute rehab** – Here at DH, sometimes available if no SAR benefits **Admission** – if the patient is A) Hemodynamically unstable 2) Not going to turn around in 24 hours 3) meets exclusion criteria	Orientee will be able to state appropriate disposition planning for patients.	
PT consultations	Scope of practice for PT in ED When to utilize versus when to test yourself **Patient needs to be differentiated (aka with a diagnosis) prior to PT evaluation. PT's job is not to clinically diagnose anyone, more to make sure they are safe to discharge home		

Week 2 -Hyperglycemia, Dehydration, TSRE/Withdrawal/Poisonings/SANE/DV

Learning and Clinical Tasks

Goals/ Learning Topics	Learning and Tasks	Measurable Outcome	Date completed
Hyperglycemia	Type II DM management - when to use ISS vs home medication. When to call Endo - steroid initiation, failed PO antihyperglycemics, hypoglycemia Diabetes Education - AmION, does not give medication recommendations, only home management Diabetic Info handouts Starting insulin regimens - DM Type II UpToDate	Orientee will be able to describe pathway for hyperglycemia, exclusion criteria including DKA, sugar >500 etc.	
DEHYDRATION / Electrolyte repletion	EXCLUSION TO CONSIDER: critical low levels (ex: K <2.5, Na < 125 or >155), EKG changes including U waves, QT prolongation, Hemodynamic instability (hypotensive, bradycardic/tachycardic) Symptoms of electrolyte derangement: https://www.osmosis.org/answers/electrolyte-imbalances MANAGEMENT: - Repletion orders (GENERAL rule of thumb based on value - Electrolyte charts - Antiemetics – be sure to KNOW which antiemetics can worsen QT prolongation and choose wisely, especially if already hypokalemic - Antidiarrheal if proven to be not infectious - IV fluids (with D5 if ketotic) - Repeat labs after repletion finishes - Check urine, monitor for AKI.	Orientee will be able to describe electrolyte imbalances and individual causes of each electrolyte abnormality, as well as suspected symptoms and which are considered severe requiring admission. Able to articulate appropriate dosing of electrolytes when needing repletion (K, Mag, Ca if needed) Able to describe situations when lab results may not be reliable for electrolytes. Able to decide when a patient is needing admission versus stable for discharge.	

	- Keep on TELEMETRY! When to discharge: - electrolytes within normal limits - tolerating PO When to admit: persistent vomiting, persistent diarrhea, unable to tolerate food in the ED. THINGS TO CONSIDER: - hyperK = hemolyzed? - Hypokalemia → also replace mag - Hyponatremia → LOOK AT GLUCOSE Na Correction MdCALC - Hypocalcemia → Albumin? Ionized Ca?		
Alcohol intoxication, alcohol withdrawal, Severity of Ethanol Withdrawal Scale (SEWS), and sober reevaluations	-SEWS PROTOCOL: SEWS PPT , actual nursing SEWS worksheet SEWS RN Orders - Video: Review pathophysiology of alcohol intoxication and alcohol withdrawal https://www.youtube.com/watch?v=1RxATXURxQM (Dr. Matt & Dr. Mike, 2019). - Podcast and written review: A*lcohol withdrawal and delirium tremens: Diagnosis and management* https://emergencymedicinecases.com/alcohol-withdrawal-delirium-tremens/ (Helman et al., 2016). - Review RN SEWS protocol - Review case study on http://www.emdocs.net/em3am-alcohol-intoxication/ to obtain formula to calculate time to estimated sobriety (Simon, 2017).	The orientee can state the pathophysiology of alcohol intoxication and alcohol withdrawal	
		The orientee can articulate general pharmacologic approaches to alcohol withdrawal, including when to use phenobarb, when to be cautious (recent BZD use/coingestion)	
		The orientee will be able to articulate the standard calculation to estimate time to sobriety	
		The orientee will be able to identify/name SEWS protocol as the alcohol withdrawal protocol at Denver Health.	
		Orientee observes (and if possible performs) a reasonable sober reevaluation	
Introduction to Toxidromes and agitation	-Video lecture: Poisonings and Toxidromes: Definitions, types and diagnosis: https://www.youtube.com/watch?v=0UjhK1pCqJk (Lecturio Medical, 2018)	The orientee can state common presentation for major toxidromes	
		The orientee can state medications and doses for acutely agitated patients	

	- Article: Randomized double-blind trial of intramuscular droperidol, ziprasidone, and lorazepam for acute undifferentiated agitation in the emergency department https://pubmed.ncbi.nlm.nih.gov/32888340/ (Martel et al., 2021).		
EKG review for toxidromes	Article: Utility of the electrocardiogram in drug overdoses and poisonings: Theoretical considerations and clinical implications https://doi.org/10.2174/157340312801784961 (Yates & Manini, 2012). Please access through the Pulse Clinical services UCDenver Health Sciences Library PubMed search	Orientee will articulate at least two EKG changes they learned from this article	
Management of the Acutely Agitated Patient	-Podcast and written review: *Emergency Management of the Agitated Patient* (https://emergencymedicinecases.com/emergency-management-agitated-patient/) (Helman et al., 2018). - Article: Intramuscular midazolam, olanzapine, ziprasidone, or haloperidol for treating acute agitation in the emergency department https://www.annemergmed.com/article/S0196-0644(18)30373-1/fulltext (Klein et al., 2018).	Orientee can state a broad differential, workup, and management for agitated patients	
		Orientee can state doses of sedating medications that they would order for agitated patients in various scenarios	
Trauma and Trauma Sober Reevaluations	-EMS rapid trauma assessment https://www.youtube.com/watch?v=9NYz3LCiJVo (McLean County Area EMS System, 2017). - Advanced EM Boot Camp rapid trauma assessment: https://www.youtube.com/watch?v=Y4m-e3fgOGk - Article: Motor vehicle crash severity estimations by physicians and prehospital personnel	Orientee can demonstrate a reasonable initial trauma assessment and articulate workup	
		Orientee can demonstrate a reasonable trauma sober reevaluation	
		Orientee can articulate descriptions of an MVC to better determine severity and potential risk of harm (more than simply “moderate damage/mechanism”)	

	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4915374/ (Cleveland et al., 2014). Dr. Jason Haukoos, one of our ED Attendings, is a coauthor on this article. - Review Nexus Criteria, Canadian C-Spine rule, Canadian CT Head rule	Orientee can clear c-spine using Nexus criteria or Canadian C spine rules. Orientee can articulate Canadian CTH rules	
SANE and Domestic Violence	-Review SANE documents on shared drive/google drive -Review the role of social work, SANE, and pharmacy in patients with sexual assault and domestic violence -Strangulations - When to image Evaluation of nonfatal strangulation in alert adults -Physical exam findings of concern	Orientee will be able to articulate the differences between patients who qualify for a SANE exam only and those who require a medical clearance before SANE exam Describe physical exam findings concerning tracheal injury, BCVI in strangled adults.	
		Orientee will order nPEP from the discharge pharmacy for eligible patients (and will inform ED PharmD so that PharmD can pick up/deliver and educate patient on nPEP). Orientee will consult social work for all SANE patients	

Chest pain/stress testing, Respiratory Problems - Asthma, COPD, COVID, Hypoxia, CHF exacerbation, CAP

Learning and Clinical Tasks

Goals/ Learning Topics	**Learning and Tasks**	**Measurable Outcome**	**Date completed**
Stress testing guidelines	Review stress test guidelines in EMESIS resources- Which stress test to choose **important to make sure patient is chest pain free prior to start of stress testing, can use nitrates – discuss with EP APP on call prior to administration Review weekend considerations, NPO considerations, body weights and medications to hold prior to stress test (Beta Blockers) Review prior stress tests, CTAs, catheterizations ● DOES NOT need repeat stress test - if their stress is within 2 years, negative and NO comorbidities (DM,CAD, age over 75) OR if their stress was negative in the last year and have comorbidities ● CTA/Cardiac Catheterization - if their cath is within 5 years and completely clean OR 2 years if any non obstructive lesions	Orientee will be able to discuss appropriate stress tests to order for patients with/without comorbidities, when to hold medications and what education to give prior to stress testing (NPO, what to expect, timeline for results etc)	
Chest Pain	HEART Score (anything >6 should be admitted per pathway)	Prior to accepting patient, Orientee will make sure ED has completed the HS trop algorithm.	

	Denver Health hs-trop application – make sure you have it downloaded		
CHF exacerbation	Acute CHF definition and management: HF UpToDate Exclusion criteria: seen on pathway, importantly new O2 requirement. When to involve cardiology – failed outpatient medication management, needing med changes as outpatient, cardiology follow up, failure to diuresis despite IV lasix Starting weights very important in establishing the amount of fluid overload. Consider holding BB in acute heart failure exacerbation. If new Dx of CHF (Or patient has no idea what CHF is – consider admission for medication optimization, ensuring follow up) Also, most patients need CCC follow up unless are already very plugged into care. (placed as CCC referral in Dispo) When to ADMIT: creatinine inc by 50%, rising trop, persistent hypoxia, ischemic changes	Orientee will be able to discuss findings of acute CHF, appropriate lasix dosing and monitoring for signs of diuresis and electrolyte abnormalities Discuss appropriate discharge instructions for HF patients, and disposition planning.	
ASTHMA exacerbation (not new dx)	TREATMENT FOR ASTHMA: Asthma Up to Date 1. Respiratory PCR Panel 2. Duo Nebs every 4 hours scheduled. Unable to do continuous nebs in the CDU. 3. Prednisone 40mg daily 4. Magnesium 2gm IV x1 (mixed data, but very low side effect	Orientee will be able to describe acute asthma exacerbation and when a patient is mild, moderate to severe exacerbation. Order the required treatments specifically for asthma exacerbation. Able to decide when a patient is needing admission versus stable for discharge.	

	profile) AAFP Mag in Asthma Review , IV mag in Asthma 5. Continuous pulse ox monitoring 6. Consider peak flow responses – Acute exacerbation Peak Flow When to consider admission 1. New oxygen requirement after extensive treatment. 2. Needing continuous neb treatments due to worsening symptoms. 3. 18 hours of treatment in the CDU and continuing to need intensive treatment for asthma		
COPD exacerbation (not new dx)	Treatment: COPD exacerbation UpToDate 1. Respiratory PCR Panel/expectorated sputum 2. Duo Nebs every 4 hours scheduled. Unable to do continuous nebs in the CDU. 3. Prednisone 40mg daily 4. Azithromycin 500mg x 1 then 250mgx4 (IF long QT – choose doxycycline 100mg BID x 5days instead) 5. Continuous pulse ox monitoring Admission: wheezing, worsening sx Discharge with: home O2 if necessary, remainder of steroid course, abx course, continue home inhalers, add tiotropium/PRN albuterol NICOTINE replacement, and SBIRT if needed.	Orientee will be able to describe acute COPD exacerbation and when a patient is mild, moderate to severe exacerbation. Order the required treatments specifically for COPDexacerbation. Able to decide when a patient is needing admission versus stable for discharge. Provide appropriate home follow up, oxygen and medications.	
PNA/CAP	EXCLUSION CRITERIA: CURB 65 >3 (ACEPs recommendations on PSI/Curb 65 tools - Clinical Policy CAP , lactate ever over 4,	Orientee will be able to describe management of CAP in observation setting, when to admit and when to DC home.	

	Septic, Tachy >120bpm persistently, >3L Oxygen, high risk MRDO - Microbiology CAP Management: - IV Abx: Rocephin 1g x1 dose, Azithromycin 500mg x 1 dose → transition to Azithromycin 500mg daily x 5 days oral. If known strep → Amox, if already on doxy continue that - Respiratory PCR - If COVID+: decadron + Paxlovid - If Flu+: tamiflu When to DC: - No fever for 12 hours, oxygen weaning or set up for home O2. - Set up CCC referral for close follow up - Send with pulse ox from CDU	Able to describe common microbiology of CAP and appropriate therapy.	

TIA/Minor Stroke, The Neuro Exam, Syncope, Closed Head Injury on Anticoagulation, Intracranial Hemorrhage

Learning and Clinical Tasks

Goals/ Learning Topics	Learning and Tasks	Measurable Outcome	Date completed

TIA/MINOR STROKE	EXCLUSION: TPA given in ED, new Afib Dx, fluctuating/recurrent sx in last 30 days, disabling neuro deficits (thinking that they likely need multiple days of inpatient PT/OT/SLP) AHA recommendations on stroke prevention Management: - MRI Brain (non-con), CTA head/neck if not already, OR MRA head/neck, if allergic to contrast carotid doppler - Blood pressure control per Neuro - TTE w/bubble study - lipids, a1c - telemetry, PT/OT, SLP if needed - Discuss with neurology regarding ASA, statin initiation, DAPT therapy (likely do need if true TIA) - TIA Management UpToDate , Antiplatelet therapy after TIA AHA - When to DC: - neuro clearance, therapy clearance, all tests resulted. - DC with neuro and PCP follow up. - Education on risk of additional strokes after TIA nejmoa1802712-3.pdf - ADMIT: additional therapy needed, abnl	Orientee will be able to describe TIA/Minor strokes, blood pressure goals, appropriate studies in the CDU and how to interpret. Able to decide when a patient is needing admission versus stable for discharge. Appropriate patient education on TIA and risk of recurrent stroke/symptoms after.	

	imaging/study/lab needing inpt management, new afib, persistently elevated HTN, 50% stenosis of large vessel		
Neuro exam	EMBC-A: The Rapid Emergency Department Neurologic Exam Documenting a Complete Neuro Exam	Orientee will be able to conduct and document a complete neurological exam	
SYNCOPE	PASS OUT (Etiologies of Syncope) 1. Pressure - vasovagal, orthostatic hypotension, medications, volume loss (GI Bleed, AAA, dehydration), situational-micturition, cough, carotid sinus sensitivity 2. Arrhythmia - looking for more occult but lethal arrhythmia (brugada) UpToDate Brugada dx 3. Seizures - **post ictal state**, look for incontinence, oral wounds, elevated myoglobin or CK 4. Sugar - hypoglycemia 5. Output - cardiac: aortic stenosis &HOCM (Exertional syncope), MI, dissection. Pulmonary: PE, CO poisoning 6. Unusual - anxiety, panic, hyperventilation, somatization 7. Transient - TIA, basilar artery, migraine, brain hemorrhage WORKUP FOR SYNCOPE:	Orientee will be able to articulate possible causes of syncope, and which are appropriate to further evaluate in the CDU vs admission vs PCP follow up Describe the observation role of syncope, including 6 hour observation on telemetry Be able to determine when patients need additional testing to evaluate cause of syncope, particularly if it is not the first time When to call cardiology	

	- basic labs - BMP for electrolytes, CBC for anemia, CK if prolonged down - UA - +/- CTH - EKG, troponin, BNP - H&P: murmurs, family history sudden death, SOB, med changes Canadian Syncope Risk Score - Syncope Risk Tool		
CHI ON AC	Management: - hold AC while in CDU unless discussed with trauma or NSGY. - Initial CT must be done prior to acceptance. - Q1 hour neurochecks for 12 hours FROM INJURY, nursing directed. However - needs frequent re-evaluation by CDU APP provider. - Must be able to ambulate and PO challenge prior to discharge - May need PT evaluation for stability/home safety assessment. Important Considerations: - Must be a purely mechanical nature of fall, if its syncope on AC then likely needs admission for high risk syncope.	Orientee should be able to describe what patient is appropriate for CDU observation after CHI. Describe a quick neurologic exam including MSE to decipher if clinical deterioration is occurring and patient needs intervention Describe when a patient is cleared to discharge home safely.	

	- make sure patient has follow up with AC clinic if on titratable AC such as warfarin - More to come on whether DAPT is considered AC and needs additional observation (evolving topic in ED medicine rn!!) -		
ICH	**VERY important to consider exclusion criteria for this pathway. - on AC or with coagulopathy, depressed skull fracture, penetrating skull fracture, additional injuries without full workup. Management: - make sure there is a clear plan with neurosurgery (usually involves serial exams, keppra loading dose + daily keppra x 7 days) - to discharge: must be able to ambulate, be cleared by NSGY and tolerate PO.	Orientee should be able to describe what patient is appropriate for CDU observation after head trauma with ICH . Describe a quick neurologic exam including MSE to decipher if clinical deterioration is occurring and patient needs intervention Describe when patient is cleared to discharge home safely.	

Pancreatitis, Pyelonephritis, UGI Bleed, ESRD on HD (ONE RUN ONLY)

Learning and Clinical Tasks

Goal/Learning Topics	**Learning and Tasks**	**Measurable Outcome**	**Date Completed**

PANCREATITIS	Exclusion criteria: BISAP OVER 3 - BISAP MD Calc, over 60, needing oxygen above baseline, SIRS UpToDate acute pancreatitis Management: - IVF - please READ this is practice changing info from NEJM nejmoa2202884.pdf **note this study is mostly Gallstone pancreatitis vs alcoholic – if alcoholic consider using D5NS bolus then switch to continuous NS only fluids. D5 reduces ketosis in ETOH users. Also be weary of co-morbidities (CHF, renal failure etc) - Advance diet as tolerated (vs NPO for days as previously taught) again here is another recent study demonstrating "non-inferiority of early feeding vs delayed" however still only studied in Gallstone panc so take with grain of salt. s12876-020-01363-3.pdf - anti-emetics - please check EKG for QT prolongation prior to giving anti-emetics. Safe option could be IV ativan or Versed. - WHY do they have pancreatitis? pneumonic IGETSMASHED - Ensure patient has LFTs to eval for obstructive source – if	Orientee will be able to describe causes of pancreatitis, and etiology of pancreatitis prior to discharging the patient. Discuss fluid administration when considering etiology, volume status and comorbidities Describe when a patient is safe to discharge home versus needing additional time inpatient setting.	

	so please contact surgery. - Check TG level – Panc risk when TG over 500. - Medication evaluation - Repeat CBC/CMP Q 10 hours - Serial abd exams to eval for progressive necrotizing panc - IV pain medications (morphine, dilaudid) → Transition to PO when able to When to Discharge: - Tolerating PO - no signs of ETOH w/d (if so → SEWS protocol) - belly pain improving and tolerating PO pain control → If not then consider additional imaging including CT to look for perf, peritoneal signs, nec panc, etc. Discuss with attending prior to imaging!		

Pyelonephritis	EXCLUSION CRITERIA TO BE AWARE OF: - Pregnant, septic, renal abscess, AKI, MRDO/Pseudomonas urine (requires IV abx) MANAGEMENT: - IV abx x 1 dose (Rocephin 1g Q24 vs levaquin if allergy) FOLLOW ANTIBIOGRAM. Make sure to think about risks of FQ in patients, and BBW education. - Transition to PO abx first dose (per antibiogram) - consider avoiding bactrim if hx AKI - Follow up on urine culture WHEN TO DISCHARGE: - able to tolerate PO, ambulate - ensure good follow up/strict return precautions - ADMIT: concern for developing renal abscess - Renal/Perinephric abscess UpToDate , SIRS, AKI	Orientee will be able to describe management of pyelonephritis in observation setting, when to admit and when to consider renal abscess.	

ESRD ONE RUN ONLY	Inclusion: only patients who PER renal require one run of HD and then can leave - ED must talk to renal first, and they make that decision. - IF one run only, safe to come to CDU in the mean time. Considerations: - Typically hypertensive, thats totally ok. Do not attempt to treat their blood pressure prior to HD. - Start on RENAL WITH HD diet. This avoids high potassium containing foods. - MAKE sure they've had an EKG. Renal patients typically run a bit higher potassium without cardiac involvement. Its renal's decision to shift K or treat, not ours. - keep them on Tele while in the unit		

UPPER GI BLEED	Calculate GBS Score MD CALC Approach to UGI bleeding in Adults - UGI UpToDate Management: start IV PPI 80mg DAILY - CBC Q4 hours x 3 → Admit if drop >2 hgb points - IV fluids - large bore IVs - If GBS >1 → CDU and GI consult - If GBS >2 → NEED GI consult prior to placing in CDU. If GI ok with it, then they can come over **Make sure: - DO NOT give home anticoagulation unless low clinical suspicion for acute bleeding - make sure all patients have documented DRE/FOBT - NO IBUPROFEN OR TORADOL - If any signs of Lower GI bleed (BRBPR, hematochezia, then will need admission.	Orientee will be able to explain relevant exclusion criteria of GI bleed pathway patients, and when to consult GI versus when to require GI consult prior to CDU admission.	

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