Final Exam.

Blood. Transfusion.

NI: VS. baseline. before/during/after.
Remain w/Pt first 15 min-30min.
Lab. - Plt. 20,000↓. Hgb 6↓.
Consent.
Blood sample - Compatibility.
Bracelet - lost → redraw.
IV. 18-20gage. ↓.
2RN. to Varify. → . Correct blood/Pt.
Prime. set w/ 0.9% NS. -ONLY. → Y tubing/filter

Intra NI = Remain (15-30min.
Assess VS. q 15 min - elderly/HF.
Post NI = VS. . dispose remain BP. File document.

S/S. transfusion reaction.
- Acute hemolytic = InCompatible → . DIC / circular failure.
  S/S -- chill. fever. low back pain. ↑HR. flushing. ↓BP. ↑RR. CP. Nausea. Anxiety. U. Hgb. impending sense of doom.
- Febrile = chills. ↑ (F(ow°C). flushing. ↓BP. ↑HR.
- Allergic = Itching. Urticaria. flushing.
  → Angiolytic. bronchospasm. laryngeal edema. shock.
- Bacterial = Wheezing. dyspnea. chest Tight. Cyanosis. ↓BP. shock.
- Fluid overload = Crackle. dyspnea. Cough. anxiety. JVD. ↑HR.
  → Pulmonary edema.

Chest Tube.

Suction Control chamber : -20cm H_2O. Continuous bubbling → Stop bubble → Leakage

Water Seal " → 1 way valve (prevent back flow)

→ 2 cm line filled ← check q2h. (+) water.

→ Tidal ↑ during respiration → Stop tidal. → Lung reexpansion / System Obstruction

→ Continuous bubble. → Air-Leak in system

chg [Collection "

NI : Patency ↓ Kink (Coil tubing close to bed)

Under chest level.

Mark level. q shift 8h → change System if full.

→ Report ↑ 70 ml/hr drainage.

position change q2h → semi-high fowler..

Clamp ONLY → Air leak during system change.

accident disconnection of system (or damage)

↓

↑ pneumothorax.

Removal : 30min before - pain meds.

Instruct → deep breath, exhale, bear down (Valsalva maneuver)

→ hold it during removal.

Apply. air-tight sterile petroleum jelly gauze dressing.

w/ heavy weight strech tape.

CXR..

Scanned with CamScanner

ETT. suctioning.

NI:. Hyperoxygenate ↑O₂. → Airway patency Assess ½ h.

100–120 mmHg pressure → **Closed suction** → Clean glove

PPE.. Cough before suction

No need disconnect ventilator

↓

Insert Catheter without suctioning.

↓

After insertion. Apply suctioning while rotate motion to remove.

↓

Hyperinflate. ↑O₂

Connect to suctioning Tube to port.

↑O₂ – 30 sec.

Gently quickly. Insert to resistance → pull back ½"

Apply Cont/Intermittent pressure.

withdraw catheter over 10 sec ↓

Hyper O₂ 30 sec.

perform. 2–3 suctioning as to tolerated

Reconnect. Pt to Ventilator.

OPEN suction.

↓

Sterile Catheter package.

Fill. Container w/ sterile water

S. gloves.

Cardiac Rhythm.

A-fib.  500 bpm. CP. SOB. ↓BP. ↓CO.
No P-wave. Irregular.
Normal QRS.

A. Flutter. 
"Saw-tooth" p-wave
Atrial rate 250-640 bpm.

Tachycardia. 100↑.

Supraventricular tachycardia. 150↑.

Sinus Bradycardia 60↓

1°. Heart Block. Prolonged. PR interval

2° " Type I → Wenckebach.
→ PR interval progressively longer

2° " Type II → Mobitz II.
→ PR Interval - constant & regular.
in 2:1 or 3:1 pattern w/ QRS.

3°. " AV-block Irregular P wave, QRS. → Pacemaker only.
No correlation P ↔ QRS.

V-tach. 

V-Fib. 

 Torsade. Pointe

Asystole.

Pneumothorax.

tension Pneumo - Air trapped PJ.
haemothorax
spontaneous
Flail chest → ≥1 rib. multiple fracture.

S/S: Anxiety. Pleuritic Pain.
Resp. distress. ↑RR. HR. hypoxia. Cyanosis. dyspnea. Accessory muscle use
Tracheal deviation. → to unaffective side. (Tension Pneumothorax)
↓ or absent breath sound.
Asymmetrical chest wall movement.
Hyperresonance / percussion due to trapped air.
Dull percussion (Hemothorax)
Subcutaneous emphysema (Air accumulated in subcutaneous tissue)

MI.

♡ cell damage

Creatine kinase. ↑@2-12h. P@24h. Return: 48-72h. 30-170.

MI marker
Troponin. I .0.03↓ ↑ 3-12h. P 24h. Elevated 5-10days
↕ protein contraction
Troponin T. 0.1↓. ↑ 3-12h P 12h-3d. E. 5-14 days.

Myoglobin. 90↓ ↑ 1-4h. P 6-7h. R. 24h.
protein transport O2

Creatine phosphokinase = CPK · Muscle enzyme breakdown.

Dx: CXR.
Echo. - valve d/o.
ECG. - ↑ST. segment. ↑Twave.
Angiography - ♡ Cath
Chest MRI.

MONA
+
ACEI ABC. cholesterol. (Statin)
Anti: - thrombolytic
- anginal
- MI
β-blocker

Echocardiogram.

PT: U.S. Non Invasive

♡ Cardiac Catheterization

Angiography

NI. Pre cert: NPO 8h. ↑.
VS. ♥. Lung sound. Peri pulse.
Informed concent.
Allergy - shellfish/iodine.
Renal function - CR. BUN.

Cardiac Tamponade → ↑fluid accumulated pericardial sac.

S/S. ↓BP. JVD. muffled heart sound paradoxical pulse.
→ variance (normally ↑ in SBP)

Diuretic Use.

furosemide - Loop. IV - no faster 20 mg/min ↓. ↓K.

hydrochlorothiazide - Thiazide → ↓K.

Spironolactone - K-Sparing - ↑K.

Hypervolemia.

S/S: ↑weight (Acute). ↑HR.RR.BP. ↑central venouse pressure
Bounding pulse. weakness. HA. ↓LOC. Ascites.
Crackle. cough. dyspnea. Peri: edema. ↑U.output.
distended neck vein.

↑K. peaked Twave. ↑Ca.
Widen QRS. ↑Insulin/glucose.
PVS. V-fib Diuretics. Loop/thiazide
Kayexalate → polystyrene sulfonate.
Dialysis.

↓K Flat Twave ↑K-diet: figs. molasses. seaweed. Dried fruits
Prominent U wave nut. avocado, wheat germ. Lima bean.
ST depress Spinach. tomato. broccoli. potato.
Prolonged PR. beef-steak pork. veal.
KCl.
- Must diluted.
ONLY drip. IV. Tab.
No IVP. SQ. IM.

ECG ABG.

↑Ca Shortening QT Interval 

↓Ca Prolonged QT/ST Interval 

Cast.

N/T

Complication = 6 P's. Pain · Paralysis Pallor. paresthesia. pulseless
not relevant needs

Compartment syndrome. → Fasciotomy.
→ Tissue necrosis. ⇒

Fat embolism. → dyspnea. ↑HR.RR. ↓O_2. HA · ↓LOC. Confusion CP.

DVT / Pulmonary embolism. Swollen redness · calf.

Osteomyelitis. → . .

Avascular necrosis

Failure to heal.

Buck's traction → skin traction.

↓ Muscle. spasm.
↓ motor before surgery
pulling force applied.

preoperatively for hip fracture.
for immobilization in adult.

Cast. Care.

N.I. –

- Neuro (pain) assessment q1h for first 24h.
- Apply ice for 24-48h.
- Handle plaster cast w/ palms, not fingertip. until dry to prevent denting.
- Avoid cast sitting on hard surface or sharp edge.
- Before casting. area is cleaned and dried. tubular cotton web roll is placed over affected area to maintain skin integrity. → apply cast.
- After cast application. position PT → warm. dry air circulate around & under cast. → support cast area without pressure under or directly on cast for fast drying. Use gloves to touch cast until completely dry.
- Elevate cast above level of ♡ during first 24-48h to prevent edema; use cloth-covered pillow. Instead plastic while drying ca
- Ensure cast is not too tight. room for 1 finger between skin – cast
- Document drainage. report – sudden increase drainage. circling drainage on cast → unreliable indicator of drainage amount. ↑anxiety for PT.
- ↑risk impair skin integrity for older adult. → ↓ elasticity ↓sensation.

Cast.

Education :- Not place foreign objects inside cast to avoid trauma to skin. Tip under cast → blowing cool air. hair dryer
- Cover cast w/ plastic - avoid soil. of urine feces.
- Report. - Painful "hotspot". ↑ drainage. warm. odor → Infection
- Report - Change in mobility, SOB. Skin breakdown Constipation.

Demonstrate → Cover w/ plastic bag the cast during bath. showers. to keep cast dry.

DO. - Apply ice directly over fracture site for first 24h.
- Check w/ HCP before getting fiberglass cast wet.
- Dry cast thoroughly, if expose to water.
- Elevate extremity above level of ♡ - first 48h.
- Regulary move joint above & below cast
- Cool air of hair dryer → Tip under cast
- Report s/s. Complication.
- Keep appo. - checked

DON'T. - get wet cast.
- Remove any padding
- Insert object inside cast
- Bear Weight on new cast for 48h. (Not all cast made for WT bearing).
- Cover cast w/ plastic for prolonged periods.

Traction = → pulling force to ↑ & maintain alignment of injured area.

Skin traction	Vs.	Skeletal traction
Goal – ↓ muscle spasms ↓ motor before surgery		Screws inserted into bone
Pulling force attached to skin w/ tape, straps, boots, cuffs		Heavier Weight (15–30 lb)
		Longer traction time
		(+) pin site care → ↓ infection
example: Bryant's traction Buck's "		ex) Halo traction

NI – Neuro Assessment q1h–24hrs → q4h after here

- Maintain Alignment or realign if uncomfortable
- X Lifting or Removing Weights
- Weights hang freely, No resting on floor.
- If Wts. displaced → replace it
- Pulling rope → free of knots, fraying, loosening, improper position
  Assess q8–12h. ensure.
- Report → severe pain ↑ unrelieved w/ meds.
  More Pt in halo traction as a unit without applying pressure to rods. → prevent loosening pins & pain.
- Routine assess → Skin Integrity. document
- Heat + massage → muscle spasm. (Prescribed)
- Therapeutic touch (+) relaxation tech.

Traction:

Pin site Care

- Pin site care is done frequently throughout Immobilization.
  - → Drainage & redness (color, amount, odor)
    Loosening of pin
    Tenting of skin @ pin site.
- Pin care protocols (chlorhexidine) → based on physician/policies
  - → 1 cotton swab for 1 pin. Avoid cross contamination.
- Pin care → once/shift (-2 times/day. per protocol

Goal: ↓ Soft Tissue injury
Realign bone fragments
↓ muscle spasm & pain
Correct or prevent further deformities.

ICP. 10-15 mm/Hg. Mannitol. IV.

Cushing's Triad - Late s/s.

- ↑BP. ↑temp.
- ↓HR. Projectile vomiting
- ↓RR. Stupor. Coma
- Decorticate
- Decerebrate
- Flaccid.
- Cheyne stoke respiration
- Hyperventilation Apnea.

Early: 1st sign ↓LOC.

↓Speech. pupil [dilated / pinpointe.
↓Orientation. Confusion
HA severe. ↓Motor.

Hemorrhagic Stroke

s/s. Severe HA.

1st. → ↓LOC.

N/V.

Seizure

F.acial.
A rm.
S peech. slurred.
T.ime - 911

Visual disturbance
Dizziness.
Wkness.

Thrombolytic therapy

→ ONLY for Ischemic Stroke.

TPA. Tissue Plasminogen Activator.

↑effective w/in 3h upon onset (4.5h)
60 min arrival ER

No - Anticoagulant for 24h.
Active bleeding - ⊕ occult fecal
Onset 3h↑
INR 1.7↑
Received TPA in last 3 month
Hx stroke

Meningitis.

bacterial. - Droplet
Contagious.

s/s: HA. fever photophobia ↓LOC
Seizure. change behavior Nuchal rigidity
⊕. Kernig sign / Brudzinski sign

Triage Categories during mass casualty Incident.

Red. Immediate: Injury - life threating but survivable w/ min. Intervention. Pt can progress rapidly to expectant if Tx delayed.

ex) · Sucking chest Wound · airway obstruction (mechanical) · shock hemothorax (tension · pneumothorax) · asphyxia (窒息) unstable wound · incomplete amputation open fracture 2-3° burn w/ 15-40% total body surface

Yellow Delayed: Injury - Significant & require medical care but can wait hours without threat to life or limb.

ex): stable wound, w/ no significant hemorrhage · soft tissue injury maxillofacial wound, w/ no airway compromise · Vascular injury w/ good circulation · fracture w/ require open reduction. debridement · external fixation · Injury w/ eye or CNS.

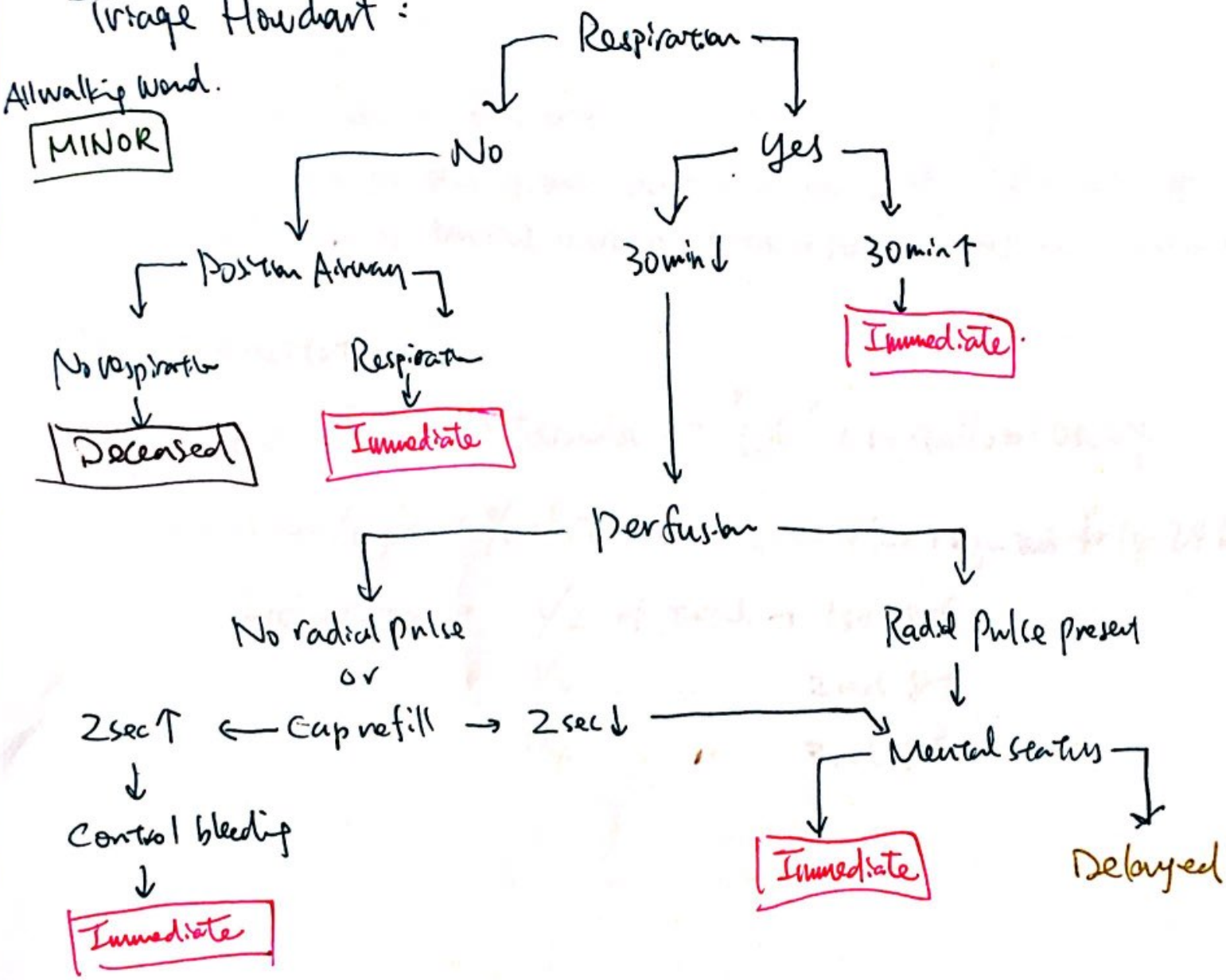
Green Minimal: Walking wounded. Minor injury · Tx can be delayed hours to days. → Pts need to be removed from Triage area.

ex) Upper extremity fracture · minor burn · Sprain laceration min bleeding · behavioral d/o · psychological disturbance.

Black Expectant: Extensive injury unlikely to survive even w/ Tx. → separated from other Pts · but not abandoned. Comfort measure as possible.

ex) Unresponsive · penetrating head wound · high spinal cord injury 2-3° burn w/ 60% + surface area · Seizure/Vomiting within 24h of radiation expo · profound shock w/ multiple injury. Agonal respiration · NO HR · BP · Pupils · fixed & dilated.

Triage Flowchart :



Escharotomy

Tx - full thickness 3° burn.

→ release pressure from constricting force of fluid built up under circumferential burn on extremeties or chest → ↑ circulation

Fluid resuscitation

Parkland (Baxter) formula. = "LR". Crystalloid ONLY.

→ 4 ml/kg × % of TBSA = total fluid required for 1st 24h

Apply cation = 1/2 of total → 1st 8h
1/4 " 2nd 8h
1/4 " 3rd 8h.

SIADH · ↑ADH · fluid retention.

NI. ↓ fluid 500mL–1L/day
I&O · Us · Pulmonary edema AMS · Lab ·

→ · Tetracycline derivatives — demeclocycline → ↑UO
→ Vasopressin antagonist · — tolvaptan/conivaptan → ↑ water secretion without Na Loss.
→ · Loop · diuretic — furosemide
→ · Hypertonic IV · — 3–5% NaCl.

Myxedema Coma · ↓ T4 ↑ TSH · ↓ hypothyroidism.

NI: Airway Patency
↓ Aspiration ·
IV fluid ·

Hypoglycemia 70↓ ·

Tx: 15–20g Carbs ·
↓
BG recheck 15min
↓
Repeat if 70↓ ·

glucose tab ·
6–10 · hard candy
4 tsp sugar
1 tbsp honey/syrup
½ cup · 4oz fruits juice/soft drink
1 cup · 8oz Low fat milk ·
6 Saltine Cracker
3 graham cracker ·

50% dextrose 25–50mL IV injection

If WNL · 70↑ → Snack (Carb + protein) · if meal 1 hr ·

↓ If Unable to swallow · → IM · SQ · Glucagon · → repeat 10 min
↓
Call provider if W ↓T

Autocare 50% dextrose IV · → 20 min ↑
once back to conscious → · PO carbs

DKA Tx.

Rehydration = ↑IV fluid replacement + electrolytes for hypovolemia / hyperosmolarity.
↓
reduce slow to

Fluid loss Ave. 6-10L.

Goal = correct deficit w/in first 24h. → prevent Cerebral edema

Initial fluid 0.9% NS → rate depedon pt clinical sage

If ↑Na → 0.45% saline

When BG 200-300↓ → switch to D5W prevent hypoglycemia
Continous insuline → ketone clearance.

Maitain fluid volume balance → VS. lung sized. I&O.

Initial UO lags behind IV fluid intake as dehydration is corrected

Monitor s/s fluid overload → older pt renal impairment CHF.

Restoring Electrolyte: K level - #1. (Tends to be high).

Rehydration → ↑plasma volume → ↓Serum K level
↑UO. → ↓K level.
↑Insulin. → ↑movement of K into cell.
} hypokalemia

Cautious/Timely K replacement → avoid dysrhythmias.

Frequent (q 2-4h initially). ECG & Lab of K during first 24hrs

Reverse Acidosis. ↑Insulin. → ↓fat breakdown → ↓ketone ↓acid build up
↳ slow. continous. 5 unit/hr. IV.

→ Hourly blood glucose (Q1hr.)

→ Regular Insulin (ONLY IV Insulin). → add to IV solution

Continuous IV until SubQ is resumed → Interruption → ↑Acidosis.
↓ Not stopped even glucose level ↓ to normal.

IV ↑HCO_3^- is not necessary → Cause ↓K level.
ONLY administered when pH 6.9↓

DKA

Regular Insulin. IV.

Tx: hypotonic. - 0.45% NaCl. til. BG 250↓.

NI: ⊕ glucose - after 250 → Prevent ↓BG.

Monitor K level. ↑K: ECG.

HHS.

1) Rehydration → No need correct acidosis.
→ No Ketones.
2) Correction electrolytes
Insulin continuous low rate.
3) ↑ Insulin.
→ replace IV fluid w/ dextrose after BG 250-s

Pancreatitis:

S/S. Sudden onset severe consistent knife-like pain @ LUQ. mid epigastric radiate to back.

N/V. Wt loss. Jaundice.

BS. ↑. Warm moist skin.

Turner's sign / Cullen's sign

↓ Ecchymosis on flank. ↓ Bluish-gray. periumbilical discoloration

Scanned with CamScanner

Hemodialysis.

Fistula → . patency = Bruits --

GI bleeds.

Assess - shock . ↓BP . ↑HR, RR . ↓LOC ↓UO .
cool clammy skin .

CKD Fatigue . lethargy . tremor depression . Intractable hiccups

S/S . fluid overload .

↓ attention span . slurred speech . ataxia . tremor .
Seizure . coma . JVD . HTN . HF . orthostatic hypotension
ECG . Peaked T wave (↑K) . ↑Uremia . SOB .
↑RR . Kussmaul resp . crackle . pleural friction rub .
frothy pink sputum . (Anemia . ecchymosis . Petechiae)
Ulcer . mouth . throat . osteodystrophy thin fragile bone

Urine . ⊕ RBC . protein ↓ specific gravity
Serum CR . 4↑
BUN 10-20 ↑ ↓H&H . ↓ erythropoietin EPO
↓ Na Ca . ↑ K . ph . Mg .