Ch 72 · ATI · ch 2.

Primary survey → rapid assessment of life-threatening condition / systemically
Standard Precaution, ABCDE.

Airway/Cervical Spine. - A&O. patency. position change. obstruction. Wound.
Breathing - Lung sound. chest expansion. RR. tracheal position. JVD. dissent.
Circulation. - HR. BP. Pulse. Capnofill. → CPR. bleeding. IV. fluid. ↓ shock.
Disability - LOC. AVPU, GCS. Neuro assessment.
Exposure. (Alert/Response to Voice/Pain/Unresponsive).

Removing clothing → Assessment.
Prevent hypothermia - 35°C (95°F ↓) → coma. hypoxemia. acidosis.
↑ warm blanket.
↑ RM temp.
Warm IV. fluid

ESI Triage: "To sort"

	ABC	HCP	
Resuscitation - level 1.	- Unstable	Immediate	Severe Resp distress Cardiac Arrest. Intubation Trauma. overdose - ↓ HR RR.
Emergent - level 2	- Threatened.	W/in 10 min	CP. - Ischemia M. Trauma - responsive.
Urgent - level 3.	- Stable	W/in 1h.	Abd pain. reproductive hip fracture - Oldery.
Less Urgent - Level 4	- Stable	Delayed	Closed extremity trauma Simple laceration, cyst, I&D
Non Urgent - level 5	- Stable	Delayed.	Flu symptom minor burn prescription refill

Airway obstruction

Can NOT speak, breath, cough

→ clutch neck between thumb & fingers (Universal Sign)

Cyanotic, apprehensive appearance. refusing to lie flat.

Stridor. labored breathing. accessory muscle use.

flaring nostrils. Anxiety. restless. confusion Cyanosis. ↓ LOC

Acetaminophen: → Level ↑ 140mg/kg - toxic. Tx: N-acetylcysteine (Mucomyst)
18 dose q 4h

M: Lethargy - encephalitis - death. (within 8h) Lavage / charcoal. acetate } Not together

↓ Liver function - GI upset. Diaphoresis. Pain @ RUQ. - Suicidal oral.

↑ AST. ALT. PT. PTT. IDC. → Hepatomegaly → L.F.
M. acidosis. ↓ BG.

Stage I 24h↓. GI. acidosis

II 24-48 h Liver studies.

III 48-96h↑ Hepatic encephalopathy. Jaundice. Vomiting. Pain. ↓ coagulant.
AKI. ↓ BG.

Unresponsive Pt: Document Condition → No family present together
P2157. Consent. Tx. responses.

Rescue → ppl around the area.

Activate → Alarm.

Confine → close door, windows

Evacuate → exit facility

P2281 Opioid. overdose. Tx: IV Naloxone - repeat.
↑resp. vascular circulation. ECG. P. edema.
Urine sample - lab

~~Acetaminophen~~ OD. M: N/V. Anorexia. Palpitat. ↑HR, BP. RR. Anxiety Diaphoresis.
X Amphetamine
Irritability. Hallucination. euphoria. hyperactivity.
↓ Inhibition. Seizure, coma.

P2173 Hypothermia. Manifestat: Apathy, poor judgement, Ataxia. Dysarthria.
Drowsiness. Pul edema. ↓ Acid-base, Coagulopathy. Coma.
→ shivering ↓. - 32°c ↓. ↓ HRBP. Pulse. Dysrhythmia. hypoxia.

P2173 Frostbite → Restore normal body temp
NI: Remove. wet clothing. Jewelry. - Rewarming bathing. 37°-40°. 30-40min.
X massage. Elevate at part. - ↓ swelling

AMS. Absent perspiration. Vascular collaps.
P2172 Heat Stroke M: CNS dysfunction; Confusion, delirium. bizarre behavior
Core temp. 105.3°F ↑. rectal. Seizure. coma. ↑ temp 40.6°C ↑. hot dry skin. Hallucinatio ↓ M. Coordinat Combativeness
anhidrosis (absent sweating) ↑RR. HR. ↓BP.
Heat Exhaustion → HA. Anxiety syncope diaphoresis. gooseflesh. thirst. orthostasis.

CO. poisoning Manifestation: Cerebral hypoxia, HA. m. weakness. palpitation
↓CNS. Dizziness. Confusion. → Coma.
pink. flushing. → Cyanosis. pale.
↓O2 sats. ↓Hgb.

Scanned with CamScanner

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 · 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 wounds w/ no significant hemorrhage · soft tissue injury maxillofacial wounds w/ no airway compromise · vascular injury w/ good circulation · fracture require open reduction · debridement · external fixation · Injury w/ eye or CNS.

Green Minimal: Walking wonded.. 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% t surface area · Seizure/Vomiting within 24h of radiation expo · profund shock w/ multiple injury. Agonal respiration · NO HR · BP · Pupils · fixed & dilated

Nurse's role in desaster response plan

→ Varies.

→ May asked to perform duties outside their area of expertise take responsibility normally by Dr. or APN.

→ May serve as Triage officer → Book

→ New settig Atypical roles for nurses arise – Safety

Intubation?

PPE.

→ used to shield from chemical, physical, biologic, radiologic hazards (for) contaminated Pts.

→ US Environmental Protection Agency (EPA)

has devided clothing & respiratory protection into 4 Categories

"N95 · goggle · face shield · glove · gown · shoe cover."

ABCD – symbol

Decontamination

→ Process of removing Contaminants or rendering them harmless.

→ Critical to health & safety of HC Provider by preventing secondary Contaminat.

→ To be effective: Minimum 2 steps.

Step 1: Remove all clothing & Jewelry → rinse Pt w/ water

Step 2: Consist of thorough soap-&-water wash & rinse

Incident Command System (ICS):

→ Federal mandated command structure → Coordinate personnel, facilities, equipment, and communication in an emergency situation.

Hospital Incident Command System (HICS):

→ Modification of ICS → Used by both hospital & Law enforcement agency

HICS Incident Commander → the hospital emergency coordinator who oversees & coordinate all surrounding event

HICS Identify facility responsibility & channels of reporting

Hospital Emergency Preparedness Plans.

→ Healthcare facility required by Joint Commission to create plan for emergency preparedness.

- MUST practice this plan at least twice/year (Te. disaster drills.)

→ Termed the Emergency Operation Plan (EOP)

P 296. → Components of EOP

* Education of staff & all participating parties is vital for success.

Activation response.
Internal / External Communication Plan
Plan for Coordinated patient care.
Security plans
Identification of external resources
Plans for people management & traffic flow.
~~Data~~ management strategy
Demobilization response
After action report or corrective plan
Plans for practice drills
Anticipated resources

MCI Plans
Education plan for all above

Initiating EOP.

→ Notification of disaster situation to health care facility vary w/ each situation

→ Disaster activation plan should clearly state how EOP is to be initiated.

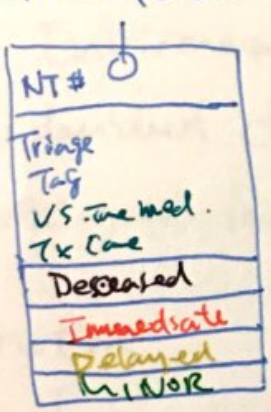
- Internal disaster → within hospital
- External " → outside "

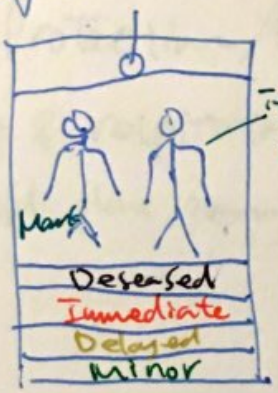
Identify Pt & Documenting Pt information.

→ Pt tracking is critical Component of casualty management.

→ Disaster tags are used to communicate Pt information.

→ Information found in Tag.





Triage Priority.
- Black
- Red
- Yellow
- Green.

Name
Address
DOB. old.
Location found
"where one thing"
Injury? mark
VS. Time med?
Tx. Wound care

→ Tag is securely w/ Pt at all time.

Triage → "To sort": determine priority of health care needs & proper site for Tx.

△ For disaster Triage → "Greatest good for greatest number of ppl"

△ Decision based on "likelihood of survival"

"Consumption of available resources"

Pt are Immediately tagged & transported or given lifesaving interventions

HAZMAT (Hazardous Materials) Team

→ Educated on how recognize patterns of illness.
  → maybe indicative of nuclear, biological, chemical exposure.
  → protocols for pharmacological tx of infectious disease agents
  → Availability of decontamination facility & personal protective gear
  → Safety measure
  → methods of responding to exposure.

Personal & Professional Preparedness.

- plan meeting place for family.
- ID. where to go if evacuation
- Determine when & how to turn off water, gas, electricity @ main switch.
- Locate safest pot in home for each type of disaster.
- Replace stored water supply every 3 month & food supply q 6 month.

Including following supply..

Back pack: ID, Cash, Credit cards, checks, extra set of keys. Cell phone.
Clean clothing Sturdy foot wear.
pocket - knife.
Water - 3 day supply.
Food - " - Perishable
Blanket / pillow / sleeping bag.
First Aid kit, medication.
Battery-Operating radio, flashlight,
Full tank gas in car.
Toiletries. matches - waterproof container

Depth - burn injury.

classification	Appearance	Cause	structure involved
1° Superficial	- Reddened. - Blanches w/ pressure. - Dry minimal or no edema - (Blisters (possible)	Sunburn. Low intensity flash Superficial scald	Epidermis
2° Partial Thickness	- Blistered - Mottled red base - Disrupted epidermis - Weeping surface edema	Scald. Flash flame Contact	Epidermis portion of dermis
3° Full Thickness	- Dry. Pale white red brown leathery or charred. ~~Coagulated~~ - Coagulated vessels. may visible - edema -	Flame Prolonged expos E. current chemical contact	Epidermis Dermis. Subcutaneous tissue Connective tissue muscle
4°. Full thickness w/ fat. fascia muscle. bone	Black.. - charred (Eschar)	Prolonged Expos. high voltage E.I.	Deep tissue muscle / bone

Extent of burn

→ Lund-Browder Chart

→ Consider more accurate → Pt's age in proportion to relative body area size.

→ Rule of Nines.

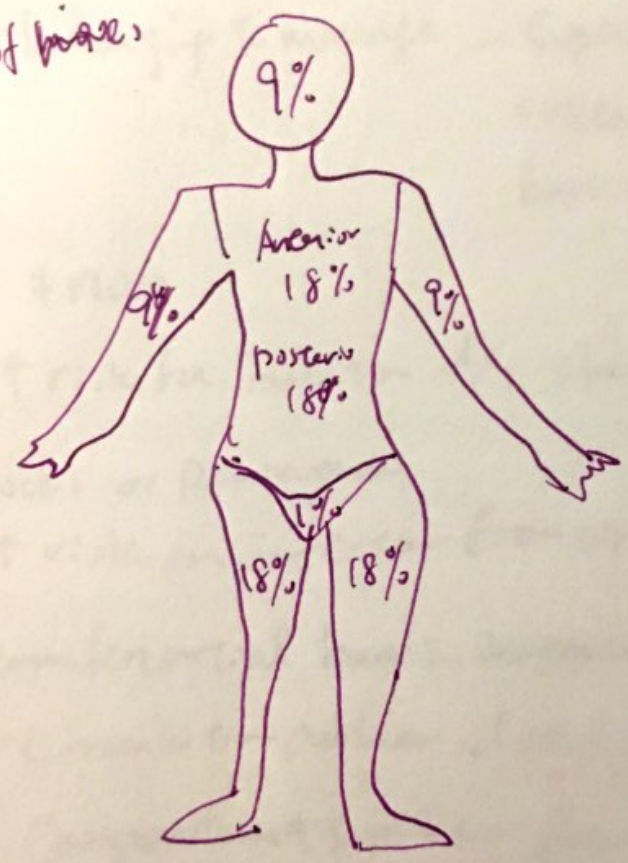
→ Used for Initial Assessment → easy to remember

→ Palmer method.

→ used for pt w/ scattered burn.

- Pt's hand (w/ fingers) → Approx. 1% TBSA

Rule of nines



Pre-hospital - Emergency Care

Burn Pt may also have other injury can take priority over burn tx. shock before burn

→ @ Scene of injury → Remove person from burn
Stop burning process
] Priority

→ Small thermal burn ↓10% TBSA - tepid.
- Cover w/ clean, cool tap water-dampened towel for Pt Comfort & Protection until Medical Care available
- Cooling within 1 min of injury help minimize depth of Inj

→ Large thermal burn ↑10% TBSA / Electrical burn
- Focus. CAB → Circulation Airway Breathing.

→ To prevent hypothermia. Cool large burns for no more than 10 min. Cool No more than 10 min

→ DO NOT Immerse burned body part in cool water
→ extensive heat loss.

→ Never cover burn w/ Ice
→ hypothermia, Vasoconstriction, → ↓ B. flow to injury.

→ Wrap Pt w/ Dry clean sheet / blanket to prevent further contamination of wound. ↑ warmth.

→ chemical burns = best treated by quickly removing from skin

→ Inhalation injury : → respiratory distress
→ CO. → 100% humidified O2. tx.

Thermal burn - Emergency management.

Electrical burn Pt: Remove from scene first - w/ protect rescuer / check pulse distal to burn

Initial.

→ If unresponsive → CAB. Assess → CPR.
Pulse 1st.

→ If responsive → Monitor ABC.

→ Stabilize cervical spine

→ Assess Inhalation injury

→ ↑ O_2 as needed — 100% humidified O_2 w/ Pt (Inhalation Injury.)

→ Circumferential full-thickness to neck, chest or large TBSA. ↙ ET Intubation.

→ endotracheal Intubation / mechanical ventilation VS. O_2. LOC rhythm

→ Monitor. VS. LOC. respiratory status. ♥ rhythm.

→ Remove non-adherent clothing, shoes, watch, Jewelry, contact lense.

→ Cover concurrent thermal burns w/ dry dressing or sheet.

→ IV access. w/ 2 large bore catheter if burn 15% ↑ TBSA.

→ Begin fluid replacement.

→ Foley if 15% ↑ TBSA

→ Elevate burned Limb above ♥ — ↓ edema

→ IV analgesic. pain assessment

→ ID & Tx other Injury

Chemical burn..

CAB. before decontamination procedure

Stabilize cervical spine.

On Going Monitoring

→ ABC.

→ VS. O_2. ♥ rhythm. LOC

→ Pain level.

→ U. output

phase of burn management.

1) Emergent / Resuscitative phase

→ time required to resolve immediate, life threating problem.
→ Last up to 72 h from the time burn occured.
→ Primary Concern → Onset of hypovolemic shock & edema formation.
ABC.

Path. of fluid & electrolyte shifts:

Fluid: 1). Massive fluid shift out of blood vessels. as result of ↑ capillary permeability. & can begin 20min post-burn.

2) ↑ as. capillary permeability. H_2O, Na^+, plasma protein (Albumin) move into interstitial space & surrounding tissue.

3) Colloidal osmotic pressure ↓ w/ progressive loss of protein from vascular space → ↑ fluid shift out of vascular space into interstitial space → 3rd spacing.

4). Other sources of fluid loss are insensible.

5) Net result → Intravascular Volume Depletion

Electrolyte: Na^+, K^+ - major electrolyte.

↑K.
↓Na

- K^+ shift develop due to cell injury & hemolyzed. RBC release K^+ into circulation → hyperkalemia.
- Na^+ rapidly move to interstitial space & remain there until edema formation ends. → hyponatremia

Inflammation & Healing.

→ Burning injury to tissue & vessels → Coagulation necrosis

→ Fibroblast & newly formed collagen fibrils appear

→ begin wound repair w/in 1st 6-12 h after injury.

Immunologic change

→ Skin barrier (1st defence) is destroyed

→ ↑ Risk for infection.

Clinical Manifestation.

- Hypovolemic shock — shunting blood ↓ perfusion to gut.
- Paralytic ileus. (Large burn) → absent ↓ bowel sound
- Shivering - result of chilling - heat loss. anxiety. pain
- Reassurance for Pt w/ anxiety. - frightened → Simple explan. what to expect

Complication

Cardio vascular - dysrhythmia. shock (hypovolemic) fasciotomy.

Resp. - U.L airway injury. obstruction edema.

Cardio pulmonary - pre existing condition CHF. COPD.
Fluid resuscitate - RF.

Urinary. - Acute tubular necrosis (hypovolemia).

Emergency phase. Nsng management.

→ Airway management / Fluid therapy / wound care.

→ Airway : - Early endotracheal intubation (↓ edema) – ↓ need for emergency tracheostomy (odema airway)
- Escharotomy in circumferential burns t. neck & chest.
- If no intubation, 100% humidified O2 & high flow O2
- Encourage TCDB. (turn. cough, deep breathing).

→ Fluid : - Parkland (Baxter) formula calculate amount of fluid to give
- Electrical burn → Fluid + Mannitol (osmotic diuretic).
↑UO. & ↓ myoglobin & hemoglobin level.
- Asses for adequacy of fluid resuscitation using clinical Parameter :
  - UO → 0.5–1.0 mL/kg/hr ; 75–100 mL/h - electric burn
  - ♡ → MAP 65↑, SBP 90↑, HR 120↓.

Crystalloid only (LR).

4 mL/kg/%TBSA

Modified Brook. 5% Albumin w/ Isotonic LR w/ dextrose.

Parkland (Baxter) formula : LR. (Crystalloid only).

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

→ Lactate Ringers

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

- Formula are guidlines.
- Rate given to produce 0.5–1 mL/kg/h of UO.

American Burn Association Consensus Fluid Resuscitation Formula suggest :
2–4 mL/kg × % TBSA burned = Total fluid requirements for 1st 24hrs.
This avoid over-resuscitation of fluid or "fluid Creep"

ex). Pt - 70kg · 50% TBSA burn

4ml × 70kg × 50 = 14,000ml /24 hr.

7000ml (½) given 1st 8hr. - Rate 875ml/hr

3500ml (¼) 2nd 8h - 437.5 ml/h.

3500 ml (¼) 3rd 8h.

Wound Care:

- Cleansing & gentle debridement - during regular shower or in bed
- Once - daily shower & dressing change w/ evening dressing change @ room
- Extensive, surgical debriment done in OR.
- 1st Wound care → physically & mentally demanding
  Provide emotional support - build trust
- Infection - further tissue injury - Sepsis.
  - source - Normal flora. skin: GI. respiration,
- PPE. sterile gloves when apply ointment & sterile dressing
- Permanent skin coverage - Primary goal.
  → Autograft (Pt's own skin) or Allograft (cadaver skin)
  Biosynthetic option - available

Phase of mangement of Burn.

phase.	Goal.
Emergent / Resuscitate. - beg'n @ time of injury - ends w/ restoration normal capillary permeability - Duration 48-72h - Include prehospital care & emergency care	Airway. IV fluid Preserve vital organ function
Resuscitative - begin w/ fluid initiation - ends when capillary integrity - normal. ↓ large fluid shifting. - Parkland - # of fluid based on wt. extent.	Prevent shock. Circulation blood volume Vital organ perfusion
Acute - Begin when pt hemodynamically stable C.P. is restored., diuresis begun - begin 48-72h after burn - Infection Control. Wound care. closure Nutrition support. pain mangement PT.	Restorative therapy. Continue until wound closed
Rehabilitation. - Overlaps acute phase - Extends beyond hospitalization.	↑ Independence Max. function.