Be able to triage patient:

Difference between urgent and non-urgent.

Know your ABCs

Airway

- Inhalation injury (e.g. fire victim)
- Obstruction (partial or complete) from foreign bodies, debris (vomitus), or tongue
- Penetrating wounds &/or blunt trauma to upper airway structures

Breathing

- Anaphylaxis
- Flail chest w/ pulmonary contusion
- Hemothorax
- Pneumothorax (e.g. open, tension)

- Circulation
  - Direct cardiac injury (e.g. MI, trauma)
  - Pericardial tamponade
  - Shock (e.g. massive burns, hypovolemia)
  - Uncontrolled external hemorrhage
  - Hypothermia

- Disability
  - Glascow Coma Scale
-

Apply past assessment skills

Know normal, baseline of your patient, improvement of condition, deterioration of condition, primary survey,

Be able to prioritize patients

Emergency Triage

1- Resuscitation

- Overdose, Cardiac Arrest, Severe respiratory distress, Unresponsive & ventilated

2- Emergent

- Shortness of breath (with overall stable vitals), chest pain, multiple trauma that is A&O

3- Urgent

- Abdominal pain, hip fracture in older adult

4- Less urgent

- Laceration, UTI (with stable vitals), closed fracture

5- Non urgent

- Scratched eye, rash, minor burn, med refill

Understand consent in emergency care and standard care

- In Emergent Care
    - Implied Consent may be appropriate if pt is unable to give due to mental status, condition, or pain medications and treatment is medically necessary
- In Standard Care
    - Informed Consent requires that the pt understand risks, benefits, and alternative treatments. Nurse must verify pt is informed and able to sign willingly, and nurse must witness pt and provider sign informed consent form.

When can we discharge a patient?

- Once stable

Education on disaster readiness supply kit

- 3 day supply of food and water
- 1 gallon of water per person per day

PPE

- Level A: highest level of respiratory, skin, eye, and mucus membrane protection
    - Self-contained breathing apparatus, fully encapsulating/vapor-tight/chemical resistant suit with chemical-resistant gloves and boots
- Level B: highest level of respiratory protection but a lesser level of skin and eye protection
    - Include SCBA and chemical resistant suit but is not vapor tight

- Level C: requires air-purified respirator (uses filters/sorbent materials to remove harmful substances from air)
    - Chemical resistant coverall with splash hood, chemical-resistant gloves and boots
- Level D: normal work uniform

Disaster preparedness and education

- Plan meeting place
- Learn how to turn off water, gas, and electricity
- Replace stored water every 3 months and food every 6

Shock:

Treatments

Assessment (s/s, and after treatment)

- S/S
    - Tachycardia
    - Hypotension
    - Tachypnea

- Risk factors
    - Hennorage
    - Cardiac arrest
    - Myocardial dysfunction

Burns

- 1st degree - Superficial burns
    - Epidermis only
    - S/S
        - Red/Pink
        - Skin intact
        - Minimal edema
        - No blistering or eschar
        - Pain w/ touch and heat

- 2nd Degree – Superficial Partial thickness
    - Epidermis and Dermis
    - S/S
        - Redness
        - Blistering
        - Pain
    - Nursing actions

- 2nd Degree – Deep partial thickness
    - Epidermis and deep dermis
    - S/S
        - Eschar

- 3rd degree - Full thickness
    - Epidermis, Dermis, with nerve damage
    - S/S
        - Red, black, brown, yellow
        - Hard inelastic eschar
        - Severe edema
        - Minimal sensation and pain (nerve damage)

- 4th degree - Deep Full thickness
    - Damage to all layers – muscle, tendons, bones
    - S/S
        - Black
        - No edema
        - No pain
        - Hard inelastic eschar

- Nursing Actions
    - Give Isotonic crystalloids
        - Lactated Ringers
        - 4 mL/kg x BSA affects
            - 50% in first 8 hours
            - 25% in 2nd 8 hours
            - 25% in next 8 hours
    - Cough & deep breath
    - ROM start at admission
    - 100% humidified oxygen

Labs (ABGs, fluid volume, potassium, H&H)

- ABGs
- Potassium
    - Hyperkalemia
        - Potassium release into blood due to damaged cells
- Hypovolemia
- H&H is high

Treatments including fluids, how to monitor each system, surgical procedures

Surgical Procedures

- Escharotomy
  - Incision through the eschar
  - Relieves pressure & improves circulation
- Fasciotomy
  - Incision through the eschar & fascia
    - Relieves pressure when escharotomy does not & improves circulation
- Skin coverings
    - Biologic skin coverings
      - § Autograft: patient's own skin
      - § Allograft: cadaver skin
      - § Xenograft: skin from animals
    - Synthetic skin coverings
    - Biosynthetic dressings
    - Wound grafts

Monitoring each system

- Cardiovascular

  Decreased cardiac output, increases workload on heart, increased oxygen demand, vasoconstriction

  --> tachycardia, decreased tissue perfusion

- Pulmonary

  Inhalation injury

  Upper: obstructive and causes severe upper airway edema

  Lower: hypersecretion, bronchospasm, loss of ciliary action, severe edema, atelectasis, hypoxia

Fluids

Massive shift of fluid out of vessels, loss of plasma

Capillary walls more permeable

Water, Na, Albumin move into interstitial spaces (third spacing occurs)

Intravascular volume depletion

Electrolytes

Na/K shift

Na: hyponatremia d/t movement into interstitial spaces

K: hyperkalemia d/t injured cells and hemolyzed RBC releasing K into circulation

- Kidney

  Decreased blood perfusion --> decreased glomerular filtration rate, urine volume

  Muscle damage--> release of myoglobin, excreted through kidneys --> red urine

  AKI, Kidney ischemia can occur

- Inflammation & Healing

  Burning injury to tissues & vessels causes coagulation necrosis

  Neutrophils & monocytes accumulate at site of injury

  Fibroblasts & newly formed collagen fibrils appear & begin wound repair w/in 1st 6-12 hrs after injury

- Immunologic Changes

  Skin barrier is destroyed → at risk for infection

- Thermoregulatory

  Loss of integumentary system → loss of body temp regulation

  Hypothermia occurs

- Gastrointestinal
  - Decreased tissue perfusion → organ ischemia, hypoactive bowel sound, no bowel sounds, decreased feeding intolerance, paralytic ileus, signs of gastric erosion

Rule of nines (what it is and do a calculation of it)

- Chest – 18%
- Leg – 9%
- Arm – 4.5%
- Groin – 1%
- Head – 4.5%

Psychosocial aspects

Fire safety

Disaster: need outnumbers resources available

- Greatest good for greatest number of people

Incident command System

- Effective communication
- Adequate distribution of resources
- Clear member roles
- Equipment compatibility

Hospital Emergency Preparedness Plan

- Practiced 2x per year

Triage

- Red
  - Immediate/Priority treatment
  - Ex. Sucking chest wound, airway obstruction, pneumothorax, open long bone fractures, partial amputation, **15-40% TBSA burn**
- Yellow
  - Delayed/Can wait hours
  - Ex. Abdominal wound, eye and CNS injury
- Green
  - Minimal/Hours-days if needed
  - Ex. Arm fractures, minor burns, lacerations, phsych
- Black
  - Expectant
  - Extensive injury unlikely to survive
  - Tag patient and move them to a different area
  - Ex. Unresponsive, **burns >60% of BSA**, multi-trauma, pupils fixed and dilated, open head wound

Nursing Role

- May be asked to do things out of normal duties but within scope of practice
- **Triage officer**
  - EMS & physicians can also do this

Bioterrorism: (category, s/s—first and later, how it is transmitted, treatments/actions)

Anthrax

- #1 bioterrorism organism
- Lives in soil contracted from raw meat or inhaled

- Organism: Bacillus Anthracis
- Odorless and invisible
- How is it detected: blood test

How is it treated:

- Penicillin
- Erythromycin
- **Ciprofloxacin**
- Gentamicin
- **Doxycycline**

S/S:

- Early: flu-like symptoms, sore throat, mild fever, fatigue, muscle aches, nausea
- Late: chest discomfort, shortness of breath, coughing up blood, painful swallowing, high fever, trouble breathing, shock, meningitis

Ebola virus

- Fever
- Aches and pains, such as severe headache, muscle and joint pain, and abdominal (stomach) pain
- Weakness and fatigue
- Gastrointestinal symptoms including diarrhea and vomiting
- Abdominal (stomach) pain
- Unexplained hemorrhaging, bleeding or bruising

Late:

- red eyes
- skin rash
- hiccups

    - Treatments/ Actions:

        - Providing fluids and electrolytes (body salts) through infusion into the vein (intravenously).
        - Offering oxygen therapy to maintain oxygen status.
        - Using medication to support blood pressure, reduce vomiting and diarrhea and to manage fever and pain.
          Treating other infections, if they occur.

Sarin gas

- Nerve agent
- Soap and water

S/S

- Early: Increased secretions, gastrointestinal motility, diarrhea, bronchospasm

  Late: loss of consciousness, convulsions, paralysis, respiratory failure, death

Smallpox

- DNA virus, very contagious
- Transmitted
  - contact and droplet
- Symptoms:
  - Fever, backpain, n/V, maculopapular rash

Hydrogen cyanide

- Contraction

  Breathing air, drinking water, eating food, or touching soil that contains cyanide

- Signs and Symptoms

  Early: tachypnea, tachycardia, seizures, coma

  Late: respiratory/cardiac arrest, respiratory failure, death

- Treatments/ Actions

  Decontamination: soap and water

Botulism

- Organism: clostridium botulism
- S/S:
  - Paralysis of arms, legs, trunk, respiratory muscles