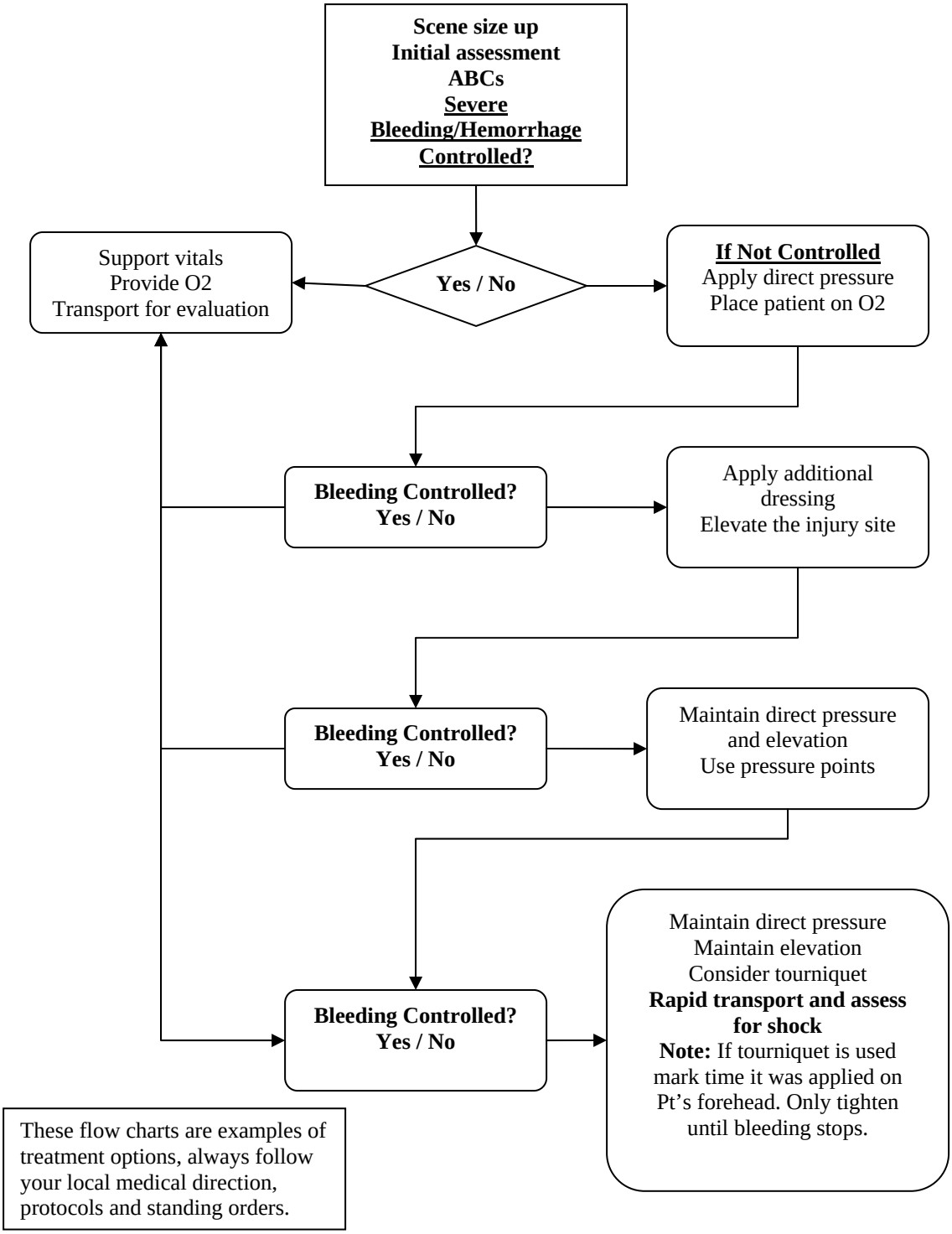
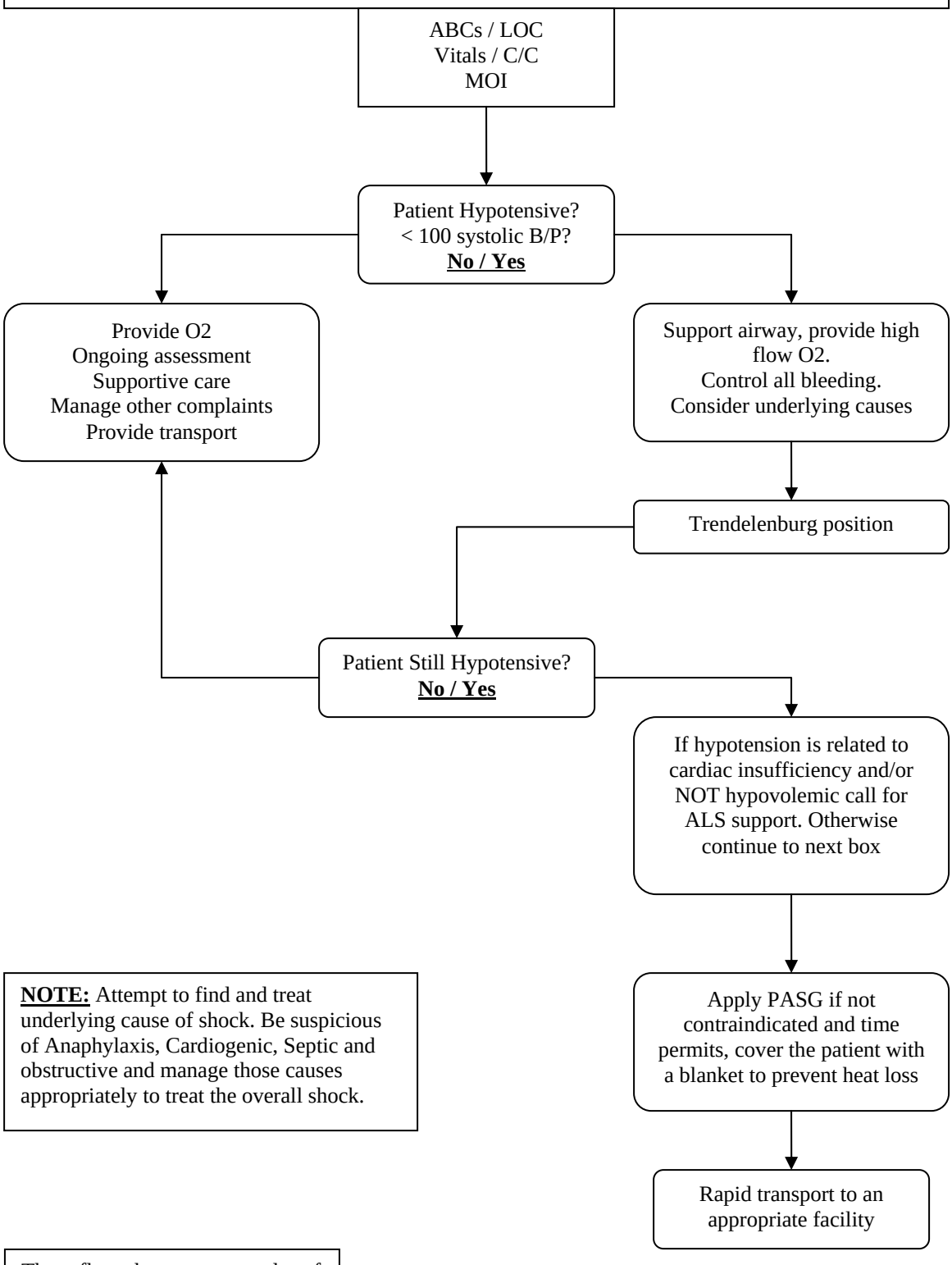
Bleeding Hemorrhage Control



Shock Management



NOTE: Attempt to find and treat underlying cause of shock. Be suspicious of Anaphylaxis, Cardiogenic, Septic and obstructive and manage those causes appropriately to treat the overall shock.

These flow charts are examples of treatment options, always follow your local medical direction, protocols and standing orders.

Soft Tissue Trauma

Definitions

- **Epidermis** – Top most superficial layer of skin, has no vascular beds or capillaries and is comprised of mostly dead skin cells.
- **Dermis –** Is under the Epidermis and provides nourishment for skin and glands; furthermore, it has capillaries and nervous tissues, for motor and sensory functions.
- **Two responses occur to trauma – 1**.) Being vascular, by shunting or dilating **2**.) Being an inflammatory response.
- **Tetanus** – Spores of bacterium that enter a wound and cause infection, if untreated it can cause nervous system damage, even death.

Blood Clotting

- Disease process can inhibit and greatly affect clotting. For example: hemophilia, thrombocytopenia (low platelet count), liver disease or various drug use.
- Prescription drugs may inhibit clotting: aspirin, Warfrin, Coumadin, and Heparin.

Inflammatory Response

Inflammation is associated with:

- Swelling
- Pain
- Warm or hot to touch (from pyrogens)
- Redness

Wound Healing

- Collagen is the main structural protein for body tissue regeneration.
- Factors that affect healing include: anatomical location, medications, diseases processes, and infections.
- **Factors that inhibit healing**: ETOH abuse, diabetes, peripheral vascular disease, malnutrition, cancer, and heart disease among many other conditions.

High Risk Wounds

- Are classified by their anatomical area and MOI.
- High risk for infection wounds: human/animal bites, foreign bodies, and injections.

Note: Wounds may require closure, via staples, sutures, tape or glue. Examples: lacerations, de–gloving, gaping wounds, cosmetic areas.

Closed Wounds

- **Contusion** – Blood vessel disruption below the epidermis, associated with pain, and swelling.
- **Ecchymosis** – Bruising
- **Hematoma** – Collection of blood beneath the skin (like a goose egg) larger tissue damage and larger vessel disruption.

Open Wounds

- **Abrasion** – Caused by scraping or rubbing away of a layer or layers of the skin.
- **Laceration** – Results from a tear, incision, or split in the skin and may be deep or superficial.
- **Puncture** – Any sharp or blunt object that penetrates the skin. Similar to impalement and may be deep or superficial.
- **Avulsion** – A full thickness skin loss in which wound edges cannot be approximated.
- **Amputation** – Complete or partial removal of a digit or limb by mechanical force.
- **Bites** – By human, insect or animal and can cause infections or serious injuries.

Crush Injuries

- Occurs when tissue is exposed to compressive force.
- **3 factors:**
  1. Amount of pressure applied,
  2. Remaining pressure on body,
  3. Region of injury.

Compartment Syndrome

- Results from a crush injury and is a surgical emergency.
- Results from compressive forces to muscle groups confined in tight fibrous sheaths with minimal or no ability to stretch.
- Ischemia to muscles occurs and intracompartmental pressure continues to rise, tissue damage from lack of O2 develops.
- **Signs**: pain, paresis (loss or impaired movement), paresthesia (tingling feeling), pallor, and pulselessness. This group is called the 5 P's

Crush Syndrome

- Life threatening, results from prolonged immobilization or compression of large body sections.
- Occurs most often during catastrophic event with prolonged extrication.
- Patient initially appears stable for hours or days as long as compressive forces remain in place. When compressive forces are released, circulation is restored to the injured area, all the cellular toxins from cellular death reenters the blood stream and the toxins cause almost immediate renal failure followed by hepatic and cardiogenic failure.

Treatments

- History of illness / MOI
- Time of occurrence
- Volume of blood loss
- Pain severity
- Motor and sensory function

Bleeding Control

- **Direct pressure**
- **Elevation**
- **Pressure points**
- **Tourniquet** – Note "TK" on patient's forehead, mark time of application, use as a last resort only. Never release the tourniquet. Use wide strips of material and place pad or roll over arteries site, then wrap twice and twist until bleeding stops.

Burns

Note: Burn injuries are devastating injuries that have high mortality rates, lengthy rehab, emotional and physical scaring, and can be permanently disfiguring or disabling.

In General

- Majority of burns are thermal (from flames or scalds).
- 185 degrees can cause necrosis of the dermis in less than 1 sec.
- Severity of burns carries 3 classifications:
- Superficial thickness (First degree)
- Partial thickness (Second degree)
- Full thickness (Third degree)

Types

- **Chemical**
- **Electrical** – High voltage/lightening
- **Thermal** – From hot or scalding source
- **Radiations** – Ionized, non-ionized

Burn Management

- Stop the burning process
- DO NOT pop blisters
- Dry dressings unless otherwise advised.
- Cool burns with water
- Brush off dry or powder chemicals prior to flushing the area.
- Rapid transport
- Remove clothing and jewelry

Burn Classifications Explained

- ***Superficial*** – "First degree burns" have some redness and swelling along with pain at the site. Only superficial layer of epidermis is destroyed and usually heals within 2–3 days.
- ***Partial thickness*** – "Second degree" divided in to 2 subclasses: superficial partial thickness and severe partial thickness. Injury usually extends through epidermis to dermis and basal layers; may or may not be destroyed. May exhibit blister and white singed skin, pain sensation may be decreased because of nerves damaged. Fluid loss and infection are a concern. Healing takes approx 3 – 4 weeks.
- ***Full thickness*** – "Third degree burns" definite tissue death possible skin grafts or surgical interventions needed. Potential for massive fluid loss and infection, no pain occurs due to destroyed nerves.
- ***Fourth degree burns*** – "Not an official classification" Burns extend into muscle and bone tissue. No pain associated due to loss of all sensory, motor, control from destroyed anatomy.

Assessment

- Type of burn (thermal, chemical, electrical, radiation)
- Anatomy and body surface area.
- Facial burns? Is soot in the mouth or nose? Singed facial hair? Burnt oral structures? Stridor or abnormal lung sounds?
- **Circumferential Burns** – A true emergency that has a tourniquet effect on affected limb or body area.
- What type of chemical burn, if applicable?
- What and how much was electrical or radiation source?
- What type of radiation or electrical injury?
- Entry or exit wounds?
- Genitalia or critical areas involved?
- LOC?