Medical Team Training

Situation

Number of injured will far exceed capacity of medical professionals.

Fire Department can address only 1% of need during "Golden Day".

Hospitals will initially have insufficient staff to accept new patients.

Additional incoming staff will initially focus on hospital’s own injured.

Some Hospitals will be damaged and unable to function for days.

Some Hospitals may be inaccessible due to road, overpass damage.

Course Objectives

- Overview of HERO.
- Overview Medical Team's Role.
- Introduce Medical Team's Guides in Field GuideBook.
- Overview of Injuries expected & Treatments.
- Hands-On Practice:
  - Primary Assessment
  - Secondary Assessment
  - First Aid Treatment & Equipment.
  - Life Support Treatment & Equipment.

What HERO Does.

1. Find Incidents: - Life-threatening Hazards.	Fires, Downed Power Lines, Rupture Gas or Water Mains, Unsafe Roads, Damage Buildings.
- Damaged Buildings w potential victims.	Heavily Damaged, Moderately Damaged and Light or non Damaged buildings.
2. Find Victims.	In Light and Moderately damaged buildings. In debris field of Heavily damaged buildings.
3. Primary Assessment. Find the living & stabilize ABCs of Life.	Stop rapid **B**leeding. Check & Open **A**irways. S&R Immobilize injured **C**-Spines, **C**racked bones.
4. Extract the Living.	From Moderately damaged buildings. To a Safe area inside Lightly damaged buildings.
5. Triage.	Prioritize All Victims for Evaluation, Treatment &/ Transport.
6. Secondary Assessment i. Find & treat critical injuries.	Airway patency, Breathing problems, Smoke inhalation, Cardiac problems, Closed Head Trauma, Shock, Stroke.
ii. Find & treat non-critical injuries.	Abrasions, Burns, Cuts, Dislocations, Eviscerations, Fractures, Sprains & Strains.
7. Life Support (until transport possible).	Monitor, Suction Airways, Oxygen, Wound mgmt, prevent Infection, Hydrate, Hygiene.
8. Package Patients for Transport.	Load spinal, hip & femur injured patients into Full-body splints.
9. Transport Patients.	Find reachable, operating hospitals. Transport patients to hospital, CC, or Safe-place.

How HERO is Organized.

1. Damage Survey Team
2. Fire Suppression / Containment Team (S&R Team)
3. Search & Rescue Team
4. Medical Team
5. Transport Team
6. Command Center Officer(s)

Command Center

What HERO Has.

What HERO Has.

HERO's Priorities.

1. Rescuer Safety.

2. Prevent further injury and loss of life & property.

    Find and Mitigate hazards to life & property.

3. Help those injured in order of life-threatening need.

    Search, Rescue, Triage, Evaluate, Treat, Transport.

Where HERO Works.

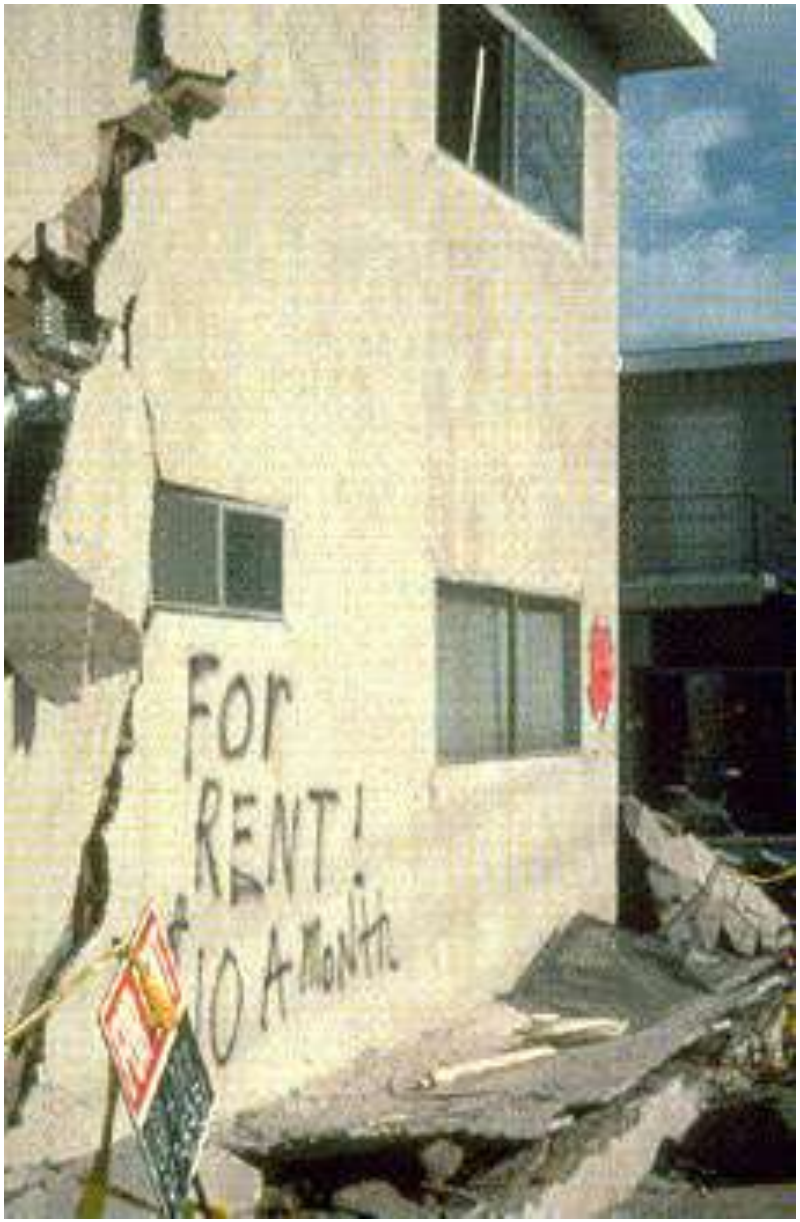
- Fires. - Suppress or contain.
- Hazards to Life. Cordon off:
  - Downed Power Lines.
  - Ruptured Gas & Water Mains.
  - Unsafe Roads.
- Lightly Damaged Buildings -Treat patients inside.
- Moderately Damaged Buildings - Extract & treat outside.
- Heavily Damaged Buildings - Treat outside collapse zone.
- Command Center Treatment Area - Life Support.

Lightly-Damaged Buildings

Broken Windows.

Interior Debris.

Moderately Damage Buildings



Broken Walls.

Fallen Decretive Work.

Heavily Damage Buildings

Partial / Total Collapse, Racked, Gas, Ground failure, Flooded.

Which HERO Team Does What?

	Lightly Damaged Buildings	Moderately Damage Buildings	Heavily Damaged Buildings	Command Center **Treatment Area**
1. Find Incidents. Hazards, Buildings, Potential Victims.				
2. Mitigate Hazards - Fires - Others				
3. Find Victims.				
4. Primary Assessment Find the Living & Stabilize.				
5. Extract the Living.				
6. Triage.				
7. Secondary Assessment Find & treat injuries.				
8. Life Support.				
9. Package for transport.				
10. Transport Patients.				

Which HERO Team Does What?

	Lightly Damaged Buildings	Moderately Damage Buildings	Heavily Damaged Buildings	Command Center **Treatment Area**
1. Find Incidents. Hazards, Buildings, Potential Victims.	Damage Survey			
2. Mitigate Hazards - Fires - Others	Fire Team Transport			
3. Find Victims.	Damage Survey			
4. Primary Assessment Find the Living & Stabilize.	Medical (Inside)			
5. Extract the Living.				
6. Triage.	Medical (Inside)			
7. Secondary Assessment Find & treat injuries.	Medical (Inside)			
8. Life Support.	Medical (Inside)			
9. Package for transport.	Medical + Transport			
10. Transport Patients.	Transport			

Which HERO Team Does What?

	Lightly Damaged Buildings	Moderately Damage Buildings		
1. Find Incidents. Hazards, Buildings, Potential Victims.	Damage Survey	Damage Survey		
2. Mitigate Hazards - Fires - Others	Fire Team Transport	Fire Team Transport		
3. Find Victims.	Damage Survey	Search & Rescue		
4. Primary Assessment Find the Living & Stabilize.	Medical (Inside)	Search & Rescue		
5. Extract the Living.		Search & Rescue		
6. Triage.	Medical (Inside)	Medical (Outside)		
7. Secondary Assessment Find & treat injuries.	Medical (Inside)	Medical (Outside)		
8. Life Support.	Medical (Inside)	Medical (Outside)		
9. Package for transport.	Medical + Transport	Medical + Transport		
10. Transport Patients.	Transport	Transport		

Which HERO Team Does What?

	Lightly Damaged Buildings	Moderately Damage Buildings	Heavily Damaged Buildings	Command Center **Treatment Area**
1. Find Incidents. Hazards, Buildings, Potential Victims.	Damage Survey	Damage Survey	Damage Survey	
2. Mitigate Hazards - Fires - Others	Fire Team Transport	Fire Team Transport	Fire Team Transport	
3. Find Victims.	Damage Survey	Search & Rescue	S&R outside Collapse Zone	
4. Primary Assessment Find the Living & Stabilize.	Medical (Inside)	Search & Rescue	S&R outside Collapse Zone	
5. Extract the Living.		Search & Rescue	S&R outside Collapse Zone	
6. Triage.	Medical (Inside)	Medical (Outside)	Medical (Outside)	
7. Secondary Assessment Find & treat injuries.	Medical (Inside)	Medical (Outside)	Medical (Outside)	
8. Life Support.	Medical (Inside)	Medical (Outside)	Medical (Outside)	
9. Package for transport.	Medical + Transport	Medical + Transport	Medical + Transport	
10. Transport Patients.	Transport	Transport	Transport	

Which HERO Team Does What?

	Lightly Damaged Buildings	Moderately Damage Buildings	Heavily Damaged Buildings	Command Center **Treatment Area**
1. Find Incidents. Hazards, Buildings, Potential Victims.	Damage Survey	Damage Survey	Damage Survey	
2. Mitigate Hazards - Fires - Others	Fire Team Transport	Fire Team Transport	Fire Team Transport	
3. Find Victims.	Damage Survey	Search & Rescue	S&R outside Collapse Zone	
4. Primary Assessment Find the Living & Stabilize.	Medical (Inside)	Search & Rescue	S&R outside Collapse Zone	Medical (If pts decline.)
5. Extract the Living.		Search & Rescue	S&R outside Collapse Zone	
6. Triage.	Medical (Inside)	Medical (Outside)	Medical (Outside)	Medical
7. Secondary Assessment Find & treat injuries.	Medical (Inside)	Medical (Outside)	Medical (Outside)	Medical
8. Life Support.	Medical (Inside)	Medical (Outside)	Medical (Outside)	Medical
9. Package for transport.	Medical + Transport	Medical + Transport	Medical + Transport	Medical + Transport
10. Transport Patients.	Transport	Transport	Transport	Transport

Medical Team's Mission

Do greatest good for greatest number in shortest time.

- Control the Killers.
- Reduce Pain.
- Treat and release the ones we can. (Minor injured)
- Instill HOPE and buy time for the ones we can’t. (Intermediates & Delayeds)

Objectives

Control the Killers:

- Airway blockage. (Death in minutes.)
- Bleeding, rapid. (Death in minutes.)
- Breathing problems (Death in hours.)
- C-Spine injury. (Paralysis / Death.)
- Closed Head Trauma (Death in hours)
- Shock. (Death in hours.)
- Hypothermia. (Death in hours.)
- Infection. (Death in days.)

Provide First Aid: (Reduce pain and infection.)

- Abrasions, Burns, Cuts.
- Dislocations, Eviscerations,
- Fractures, Sprains & Strains.

Provide Life Support (Instill Hope, Buy Time.)

- Maintain Airways. Monitor for Shock.
- Administer oxygen.
- Clean and bandage wounds.
- Offer food and hydration.
- Shelter patients.

Safety

(For both you and your patients)

Always wear Body Substance Isolation (BSI) gear.

Gloves.


Nitrile


Vinyl


Latex

Mask (surgical or dust).

Eye shield (safety glasses, goggles or face shield).

Change or sterile-dip gloves between patients.

Standard Tasks

(How Medical Teams meet objectives.)

1. Primary Assessment. Find and stop the 4-Minute Killers.

2. Triage. Sort & Prioritize Casualties for Evaluation, Treatment, Transport.

3. Secondary Assessment. Find and stop the 4-Hour Killers. Find & treat remaining injuries.

4. Life Support. Buy Time until hospitals open.

5. Patient Packaging for Transport (Immediates & Delayeds).

Primary Assessment
(Give victims the SPA Treatment!)

Size-up Scene for Safety. Stop any rapid Bleeding.

Permission to help & Level Of Consciousness check.
If unresponsive, check if …

Alive? Check for Breathing.
If not, clear & open **A**irways to enable **B**reathing.

Primary Assessment

Size-up.

Permission?

Alive?

Scene Safety
Before approaching a victim,
look for hazards to you:
- Hazardous Materials (Bleach + Ammonia)
- Loose overheads.
- Sharps (glass, nails etc.)
- Furniture that can topple or shift.
- Dangerous pets.

Situation
Number of victims? Any Trapped?
If additional help needed, request it.

Initial Impression of victim(s).
Method of Injury (MOI).
Alive? (Talking, Crying, Moving = Alive.)
Rapid Bleeding? If so, Stop it.
Conscious or Unconscious?
Head Position: Moving, fixed, abnormal?

Approach
- If possible, approach so victim can see you approaching.

Primary Assessment

Size-up.

Stop Bleeding

Permission?

Alive?

Stop Critical BLEEDING

Critical bleeding is spurting or rapid-flow bleeding.

It will be obvious.

You're unlikely to encounter it, but it may restart on patient movement.

Primary Assessment

Size-up.

Stop Bleeding

Permission?

Alive?

Critical BLEEDING First Aid

Stop any rapid bleeding via:

1. Direct pressure via gloved-hand(s).
   Add gauze sponge, or several 4X4 pads.

2. If bleeding stops, secure w pressure bandage:
   a. WoundStop / Israeli Bandage,
   b. Gauze sponge & ACE bandage, or
   b. SWAT-T as pressure bandage.

3. If not, then if wound is on:
   Limb,
   Apply SWAT-T as a tourniquet.
   Write time applied on patient.

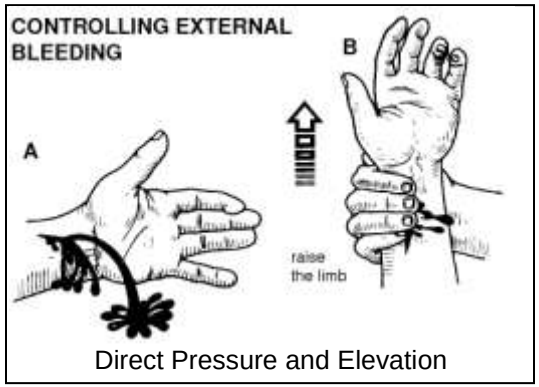
   Neck, Shoulder or Groin,
   Pack with Z-Pak / Combat gauze,

   Torso,
   Pour Hemostatic agent, ground Cayenne Pepper or Yarrow into wound.

4. Add pressure dressing.

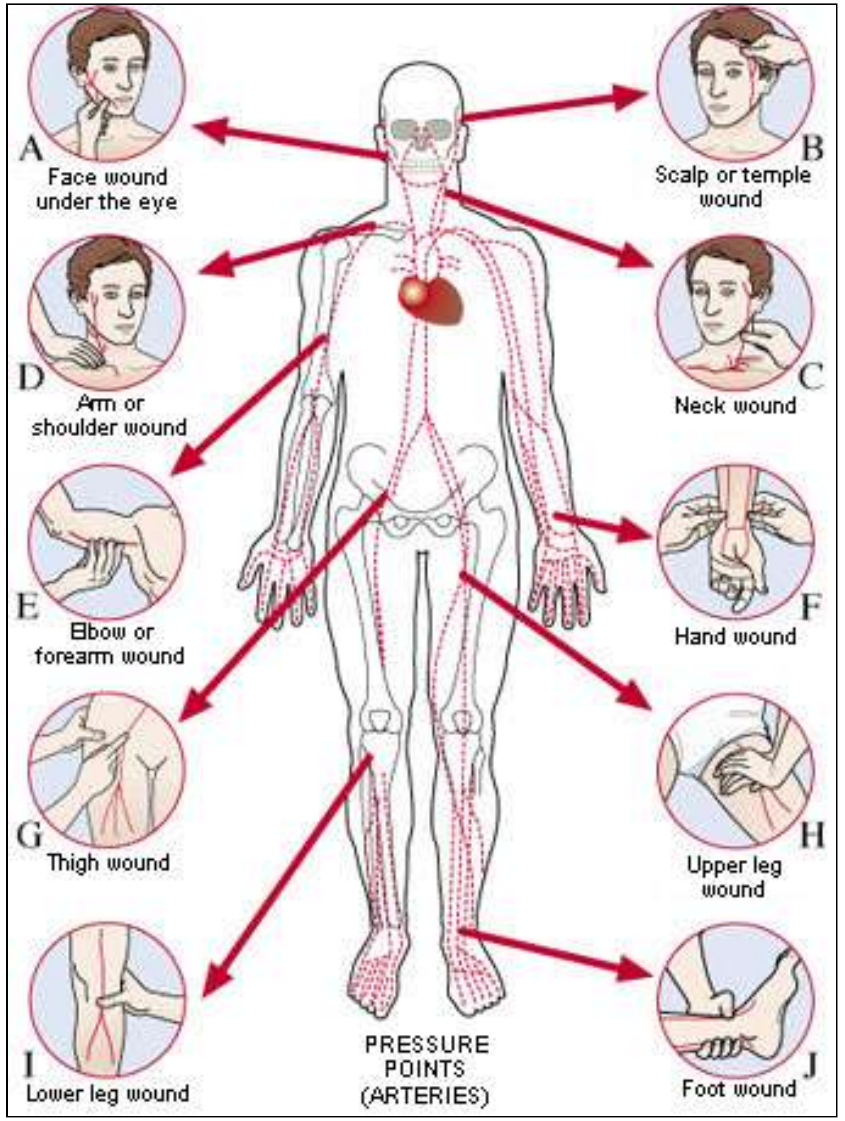
Critical Bleeding First Aid.

1. Direct Pressure & Elevation.



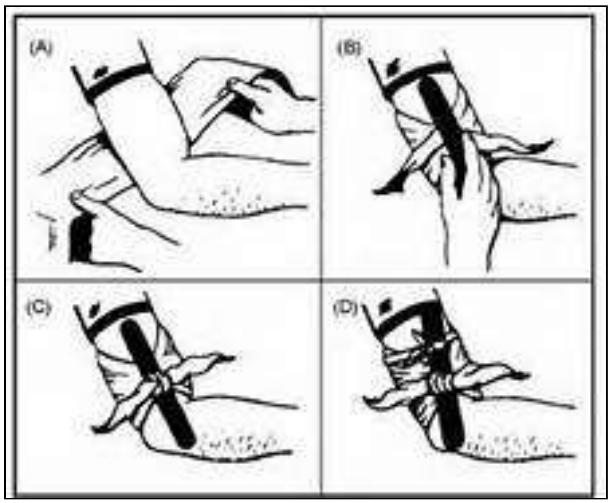
Direct Pressure and Elevation

2. Pressure Point.



3. Pressure Dressing if it can control bleeding.

4. Tourniquet if not.



Primary Assessment

Size-up.

Permission/LOC?

Alive?

(Video this conversation.)

Rapport: "Hi. What happened? Are you hurt?"

If reply intelligent (LOC = **A**lert), get permission:
"We're **Good Samaritan** volunteers,
not medical professionals. Do you want our help?"
(Ask a minor's guardian.)

If "What do you mean?",
"We're not required to help so you can't sue us
if we hurt you or your property."

If "Yes", perform *Triage*.

If "No", go to next victim or leave.

If no reply, from arms length:

1. Tap hand/arm & shout. (LOC = **V**oice)
2. If no reply, Pinch finger. (LOC = **P**ain)

If reaction (patient alive but not Alert), consent is implied, tag "I", goto Sec. Assess. - Observations.

If no reaction (LOC = **U**nresponsive), goto *Alive?*

Primary Assessment

Size-up.

Permission?

Alive?

Check if Alive.

[Done only on Unresponsive victims.]

Look, listen & feel for **B**reathing.

If breathing, *Triage* & tag. Goto next victim.

If not breathing,

Check and Clear Mouth.
Open mouth. (finger scissor or pull jaw open)
Reset any loose dentures.
If fluids/debris, logroll/HAINES-roll to drain/sweep).

Open **A**irway via **Jaw-Thrust.**

If no breathe, try **Chin-Lift Head-Tilt.**

If no breathe, tag "DEAD". Goto next patient.
(if relatives are present, Tag "**E**" [Expectant].
If asked, say it means, say "Expert care needed.")

If breathing starts but not Alert, tag "**I**" *. Goto next victim.

If breathing starts and Alert, *Triage* & tag *. Next victim.

* If victim must be left, place in HAINES & treat for Shock.

Blocked Airway First Aid

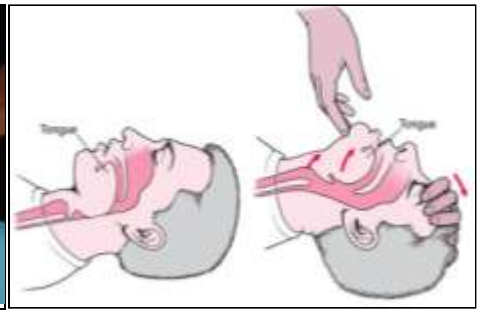
1. Open mouth via finger-scissor.

Finger-Scissor

2. Remove any large debris via finger-hook.

3. Suction out any:
   - Fluids.
   - Small debris.

4. Open Airway via:
   1. Jaw-Thrust (protects spine).
      If no breath, try…
   2. Chin-Lift Head-Tilt.



5. H.A.I.N.E.S. position keeps airway open and prevents aspiration.
   (High Arm In Neck Exposed Spine - Pope's version)
   Swing far arm out to overhead position.
   Place near hand between Neck & shoulder.
   Reach under near shoulder, grasp neck.
   Raise near knee.
   Push on near knee and shoulder to roll patient onto their uninjured side.

Primary Assessment Review

Size-up. Suit-up. Scene Safety. Situation first impression.

Stop Bleeding Stop rapid Bleeding → Direct Pressure/Tourniquet.

Permission? "Hi. We're volunteers, not Med. Pros. Do you want our help?"

If "Yes", perform *Triage* & tag, goto next victim.

If "No", go to next patient or leave.

If no reply, Tap & Shout, Pinch.

If reaction, tag "**I**", goto next victim.

If no reaction, goto *Alive?*

Alive? Look, listen & feel for **B**reathing.

If none, check mouth for fluids/debris.

If fluids/debris, roll patient to drain &/ finger sweep.

Open **A**irway via 1) Jaw Thrust, 2) Head-Tilt.

If breathing now & Alert, *Triage* & tag. Next victim.

If breathing now but not Alert, tag "**I**". Next victim.

If still not breathing, mark "DEAD" / "E". Next victim.

When all living victims stabilized, start Secondary Assessment in Triaged order.

If patient must be left unattended, place in HAINES Recover Position.

Standard Tasks

(What Medical Teams Do.)

1. Primary Assessment. (Aid for Life-threatening conditions.)

2. Triage. (Prioritize for Secondary Assessment.)

3. Secondary Assessment. (Aid for critical & non-critical injuries.)

4. Life Support - Buy Time until hospitals open.

5. Patient Packaging for Transport (Immediates & Delayeds).

Triage as part of Primary Assessment.

Prioritize (& Sort) Casualties for Evaluation, Treatment, Transport.

Memory Aid **"30-2-Can Do"**

Using observations from Primary Assessment + Perfusion Blanch Test, tag patient(s) according to their need for further evaluation and care based on their **Ra**te of Respiration, **P**erfusion, **M**ental Status and ability to **S**tand up on their own **(RPMS)** as indicated below:

Respiration, **P**erfusion, **M**ental Status (**RPMS**) **"30-2-Can Do"**						
Respirations / Minute		**P**erfusion or **P**ulse		**M**entally cognizant	Can **S**tand	Tag
Adult	Child	Capillary Refill	Radial Pulse			
0	**0**	-	-	-	-	**DEAD**
<10, > 30	**<15, >45**	**> 2 Seconds**	**None**	**No**	-	**Immediate care needed.**
>10, < 30	>15, <45	< 2 Seconds	Yes	Yes	**No**	**Delayed care OK.**
>10, < 30	>15, <45	< 2 Seconds	Yes	Yes	**Yes**	**Minor or no injury.**

Additional reasons to consider **Immediate** status:

- Amputation.
- Severe Burns (head, chest, groin, or > 10% of body.)
- Breathing difficulty.
- Required/requires Airway management.

Triage on victims brought to Med Team by S&R Team.

Do for every victim (including those walking) until you determine how to tag them. **TAG:**

If victim is an infant and appears injured, → **IMMEDIATE**

If victim is a child or adult, check RPMS: **("30, 2, Can Do")**

RESPIRATION.

1. **Identify yourself** (first name only) and **ask "Are you okay?"** ("Estás bien?").
   If victim is walking or down but talking, they are Breathing. **Go to step 3**.
   If victim is down and not responding, from arms-length **tap** victim's hand or arm **and shout**.
   If victim responds (speaks, grunts, opens eyes or moves) they are Breathing. **Go to step 3**.
   If victim does not respond, **continue to step 2**.

2. **Check respiration** for up to 10 seconds**.**
   Look at chest, **Listen** at nose & mouth, **Feel** at abdomen **for Breathing.**
   If Breathing, go to step 3.
   If not breathing, open Airway via Jaw Thrust after removing any obstructions.
   If still not breathing, open again by Chin-Lift-Head-Tilt. Give a child 2 rescue breaths.
   If still not breathing, → **DEAD**
   If breathing now, →

3. **Check Respiration Rate**.
   For **Adult,** if **< 10 or > 30** breaths per minute, →
   For **Child**, if **< 15 or > 45** breaths per minute, →

PERFUSION or **P**ULSE
Check Circulation adequacy via either:
a. **Blanch Test** (press finger nail or palm till white & release). IF color refill takes **> 2 seconds**, →
b. **Radial Pulse** (wrist) if Blanch Test is not possible. If **No Radial Pulse**, →

MENTAL STATUS
Give simple universal command (e.g. extend your hand in greeting).
IF no or an improper response (victim **Can't Do**), cognition is impaired, → **IMMEDIATE**

STAND. If victim can stand up and walk on their own, → **MINOR**

OTHERWISE, → **DELAYED**

- ☐ Guide or carry patient to the appropriate colored tarp or marked Treatment Area.
- ☐ List all casualties on Casualty Log (next page & 139).

Combined Primary Assessment and Triage Script

If you are the first to reach a patient.

Size-up downed patients before approaching.

Look for anything which can harm you (debris, electric wires, chemicals, etc). Avoid.
If severe bleeding, stop by Direct Pressure or Tourniquet.

"Are you OK?. We're volunteers not a medical professional. Do you want our help?"

If patient responds, you know they are alive and breathing. Go to *Rate Checks*.
If no response, from arms-length, shake patient slightly and ask again louder.
If no response, Look, Listen and Feel for breathing and check for carotid pulse.
If pulse but not breathing, drain, sweep or suction mouth. Open Airway via Jaw-Thrust.
If still not breathing, give 2 ventilations via BVM.
If no chest rise, re-open via Chin-Lift, Head-Tilt
If still not breathing, tag or write "**DEAD"/ "E"** on forehead. Go to next patient.
If breathing now, tag **Immediate** or "**I**". Treat for Shock. Go to next patient.

Respiration & Perfusion Rate Checks.

While listening to patient, observe Respiration Rate and do Capillary Refill "Blanch Test".
If respiration > 30 per min. or refill > 2 second, tag **Immediate** or "**I**", treat shock, go next pt.

Mental Status and Spinal Check.

"Can you squeeze my fingers?"

If not or pressure not equal, suspect Spinal injury. Tell patient not to move their head.
If response is incorrect, tag **Immediate** or "**I**", treat for shock. Go to next patient.

If patient can **Stand up & walk**, tag **Minor** or write "**M**" on forehead.

Otherwise, tag "**Delayed**" or "**D**". Say you will return. Go to next new patient.

When all patients tagged, do Secondary Assessment on Immediates, Delayeds, Minors.

Primary Assessment & Triage Practice

Standard Tasks

(What Medical Teams Do.)

1. Primary Assessment & Aid.

2. Triage.

3. Secondary Assessment & Aid.

4. Life Support.

5. Patient Packaging for Transport.

Secondary Assessment

Find and care for less critical injuries.)

History: Record info needed by professional caregivers.

- **S**ymptoms,
- **A**llergies,
- **M**edications,
- **P**ast injuries,
- **L**ast oral intake,
- **E**vents (MOI).

Observations. Assess & address problems with **vital ABCDE'S of Life**.

- **A**irway,
- **B**reathing,
- **C**ardiac problems,
- **C**-Spine.
- **C**losed-head trauma
- **D**econtamination
- **E**xposure
- **S**hock
- Stroke

Palpations: Find and 1st Aid care for all remaining injuries.

- **A**brasions,
- **B**urns,
- **C**uts,
- **D**islocations,
- **E**visceration, **I**mpalement
- **F**ractures,
- **S**prains/**S**trains.

Extended Care: Life Support & Patient positioning based on injury.

Patient Evaluation Checklist

Patient Name:_____ Age: ____ Race: ____ Sex: ___

Clothing: _____ Blood Type: _____

Home Address: _____ OK to Treat (Pt. Initial): _____

Contact Name: _____ Phone: _____

Triage Status:	Date	Time
Minor Walking Wounded.		
Delayed Can't get up & walk		
Immediate R>30, P>2 / Can't Do		
Deceased No breathing & pulse		

Level **O**f **C**onsciousness: **A**lert & Oriented _. Responds to **V**oice _. Reacts to **P**ain _. **U**nresponsive/**U**nconscious _.
(If **A**lert & Oriented [knows name, location, what happened], ⇨ History. Otherwise check for Medical tag, ⇨ Observations.)

Notes

History

Symptoms (Chief Complaint): _____ Pain (0-10): ___
Patient heard/felt: "Snap" [fracture] _. "Pop" [sprain/strain] _. Pain: Sharp _. Dull _. Constant _. Radiating _.

Allergies: None _. Aspirin _. Insect bite/sting/nuts [Anaphylaxis] _. Latex _. Penicillin _. Other:

Medications /time-last-taken: Location: ⇨

Problems: Asthma_. COPD_. Diabetes_. High BP_. Heart_ (Time Nitro taken____). Oth: _____ ⇨

Last oral intake [what & when]:

Events [MOI]:

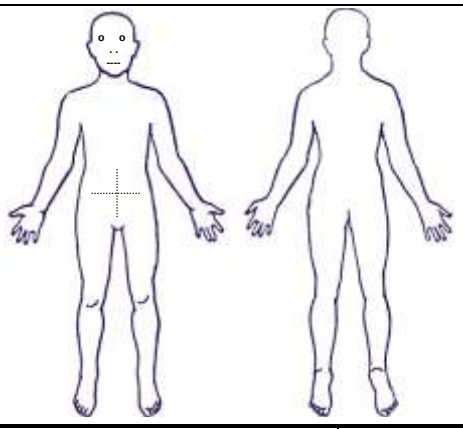
Observations (✓)

		First Aid (p.85)
Airway	Unusual sound. ⇨Check & reset dentures, suction fluids, assist w any anaphylaxis EpiPen or asthma inhaler.	Suction|Epipen|Inhaler
Breathing [See p.60 for rates.]	Arrest [stops while in your care] _, or <8 Adult, <10 Child, <20 Infant ⇨ O_2 via patient-sized BVM per pg.60	O_2 v BVM til norm/no pulse
	Distress: Smoke/Gas inhalation_, Labored_, Noisy_, Gasping_, Shallow_, or Out of Range for age (p.60) ⇨	O_2 v msk/BVM until norm
	Hypoxia [SpO_2 < 95 (<90 if COPD)] _⇨1 lpm O_2 x 95(90) - SpO_2 via NRb Mask/nasal cannula (p.60)	Maintain SpO_2 ≥95 (90)
	Sucking Chest Wound [air enters lung cavity thru a chest wound collapsing lung] _, ⇨	ChestSeal/3-side patch
	Flail Chest [paradoxical chest movement, one section collapses when the rest expands] _, ⇨	Bind/lay on Flail side
	Tension Pneumo-thorax. [1 side hyper-extended, hyper-resonant, trachea pushed away] _, ⇨	Needle Decomp-MD
Cardiac	Arrest [pulse & breathing stop] __. If AED avail., CPR while AED setup. (If no AED, tag "DEAD".)	CPR-**A**uto.**E**xt.**D**efib.
	Attack [non-trauma chest pain/pressure radiating to shoulder/arm/neck/back/abdomen] _,⇨	Pt's Nitro/325 aspirin.
Concussion	Head trauma w LOC≠A _, ear fluid_, Pupils not Equal & Reactive to Light_ or burse behind ears/around eyes_ ⇨	O_2 v mask. Ice. **I**.[3|5]
C-Spine	LOC=V,P/U_, or A w rear neck midline tenderness _, or extremity motor/sensation deficit _ ⇨	S-Collar mobile. Else[3|5|7]
D-Con	SLUDGE_. If Biological _ ⇨Isolate, HazMat _ ⇨Brush, strip & wash, Radiological _ ⇨Strip & wash.	Isolate. Decontaminate.
Exposure	Hyperthermia [body temp > 101°] _⇨ Cool & hydrate. Hypothermia [shivering, temp < 95°] _⇨ Dry & warm	Return to normal temp.
Shock	Fails RPM_. If Diabetic & breath sweet_ ⇨Insulin, otherwise _⇨ Glucose. If blood loss ⇨ Saline IV by RN.	O_2 per SpO_2,Warm pt[3|4]
Stroke	**FAST** [**F**ace droop/drool, **A**rm weakness & **S**peech slur at same **T**ime] _, tag **I** ⇨	Maintain airway. Calm.

Palpation (✓)

Either ✓ the body part / injury cell or put injury initial on image.	L R	**A**brasion	**B**urn	**C**ut, Laceration, Penetration, Impalement	Dislocation	**E**viscer ation	**F**racture (pain on vibration)	**S**prain **S**train **S**welling
Head		3|5		3|5			3|5	3|5
Neck		3|5/7		3|5/7			3|5|7	3|5|7
Shoulder								
Chest		8	8	8			8	MD - Needle Decompress
Arm								
Hand								
Abdomen						Draw knees up		Internal bleeding Draw knees up
Pelvis							Cinch. 7	
Hip					7		7	7
Leg					F			
Foot					F			
Back					7		7	7

Either place injury initial (A, B, etc.) on image, or check the appropriate Body part-Injury cell.



First Aid.
(See back for details.)
A: Clean & Cover.
B: Cool & Cover.
C: Irrigate & Close.
D:Relax & Reduce.
E: Plastic Wrap & Warm.
F: Splice (**Spl**int & **ice**)
I: Stabilize object.
S: **I**ce, **C**ompress, **E**lev.

Extended Care

Provide per 1st row matching patient's condition:

	Breathing	**Pulse**	**LOC**	**Injury or (assumed)**	**Life Support Care**	**Waiting** [w monitoring] **Position**	**Airway Mgmt**	**Fluid Mgmt**	**Transport Position**	**Airway Mgmt**	**Fluid Mgmt**
1	No	None		Cardiac Arrest	CPR + AED	If no carotid pulse & no spontaneous breathing in 10 min., move to Morgue.					
2	No	Carotid		Respiratory Arrest	BMV + O_2	Continue until breathing, or until no carotid pulse for 10 minutes.					
3	Shock p114	Carotid	≠ A	Shock + Head-Neck	Cool head Warm pt	Supine*	Naso Airway*	Suction*	FB Vac Splint	Naso Airway	Roll Pt.
4	Shock p114	Carotid	≠ A	Shock	Warm Pt.	Supine ^*	Naso Airway*	Suction*	Supine	Naso Airway	Roll Pt.
5	Yes	Radial	≠ A	Head-Neck	Cool Head	BB-head hi*	Naso Airway*	Suction*	FB Vac Splint	Naso Airway	Roll Pt.
6	Yes	Radial	U	(Airway at risk)	Maintain Airway	HAINES	HAINES	HAINES	FB Vac Splint	Naso Airway	Roll Pt.
7	Yes	Radial	A	Spine | Pelvis | Hip	FB Vac Splint	Supine	Patient	Suction	FB Vac Splint	Patient	Roll Pt.
8	Distressed	Radial	A	Rib | Chest	O_2 per SpO_2	Tripod	Patient	Patient	Fowler	Patient	Patient
9	Normal	Radial	A	Other than above	1st Aid (p.85)	Comfort	Patient	Patient	Comfort	Patient	Patient

^ Raise Calves & Feet above heart if BP falls. * HAINES Position if patient cannot be monitored continuously.

First Aid Treatment Reference

Amputation. Tourniquet 2" above stump/joint. Wrap part w damp cloth. Bag. Place in 2nd bag w ice & water. Pt. ID on bag.
Bleeding: Rapid- Limbs: tourniquet (p.85). Neck, Shoulder, Groin, or large deep wound: Z-Pak, dressing, direct pressure.
Debris-Imbedded Wound - Tourniquet to stop bleeding enough to see and remove glass/debris, then Pressure Dressing.
Clean Wound - Direct pressure w gauze sponge/pad dressing. Compression bandage. If soak thru, add more pads.
Breathing Problems [Abnormal rate/depth, or Labored.] Normal rates: Adults >12 yrs.12 -20, Children 1-12 yrs.15 -30, Infants 1 mo -1 yr.25 - 50.
Pulse but not breathing, open airway: Jaw Thrust, Head Tilt. If still not, ventilate w age-sized Bag-Valve-Mask*, inflate chest (not stomach) 1 sec. every: 5 sec. for adult, 3 sec. for child or infant, until revived or no carotid pulse for 10 minutes.
Breathing rate below normal: ventilate between patient's breaths. Breathing rapid but shallow: assist every 2nd pt's breaths.
If you have Oxygen equipment and training, use Oxygen Administration Procedure on p.60. *Nasopharyngeal airway prn.
Burns [Redness = 1st Degree. Blisters = 2nd Degree. Charred /open skin = 3rd Degree] Check under clothes. Cut away unstuck contaminated clothing & jewelry.
1st Degree - Cool with cool water[2] (running, dip or compress) until area is cool to touch. Apply hydrogel or aloe vera.
2nd Degree - Cool a 10%-body-area at a time while warming pt. (Pt's palm = 1%). Apply hydrogel every 6 hrs. Cover loosely
3rd Degree - Cover with sterile, non-stick dressing/clean sheet. Hydrate pt. Treat for Shock. Transport to a Burn Center ASAP.
Dry chemical - Brush off, then flush. Liquid chemical [wet discolored skin &/ non-fire blisters] - Flush. Soap & water wash.
Tag "Immediate" for 2nd degree burns covering face, chest, hand, foot, genitals, or more than 10% of body, or if blisters larger than a quarter, and all 3rd degree burns.
Cardiac Arrest [Pulse & breathing stop] If AED, CPR while AED set up. Otherwise, unless infinite resource, tag **E**xpectant.
Cardiac Attack (Heart attack) [Crushing chest pain radiating to arm, jaw, back, abdomen. Nausea, indigestion in women. Can't raise arm or smile.] Patient's nitroglycerin, or chew 325 mg aspirin if not allergic, pregnant, hemophiliac or child, and no internal bleeding or blood thinners. Recline, rest.
Concussion [Deformity[3], unequal/non-reactive pupils, 'Halo' fluid from ears/nose, nausea, seizures] If no Shock, position head-end up. Ice.
Dislocation. Relax pt. Shoulder reduction: a) Prone, weight dangling arm. b) Supine forearm flexed 90° slowly rotated outward.
Electrocution. [3rd degree burn, no 1st or 2nd] If no pulse & <10 min. since event, AED or CPR. If pulse, cool & cover burns.
Evisceration [Exposed bowel] Do not flush. Cover/wrap area w plastic. Cover w folded towel for warmth & containment.
Eye injury. Completely cover both eyes, or allow 1/16" peephole for good eye, to prevent movement of injured eye.
Fractures. [Fractures present as pain or non-conductive to vibration via tuning fork/cell phone.]
Loosen/remove restrictive clothing, jewelry. If distal CMS, splint as found. Else apply traction & reposition for CMS.
Angular Fracture. [**Spl-ice**] **Spl**int or support in position found via vacuum/SAM splints. **Ice**[2] 20 min. every hour.
In-line Fracture of Arm or leg. [**Spl-ice**] **Spl**int bone(s) & immobilize joints above & below injury. **Ice**[2] 20 min. every hour.
Pelvic Fracture. [Crotch pain.] Apply SAM Pelvic Sling or 36" SAM splint cinched via belt/swath). Cinch to 33 lbs/least pain.
Hip Fracture. [Hip pain. Legs appear different lengths.] Splint in vacuum splint mattress, or on backboard and pad voids.
Femur Mid-shaft. EMRs and above may apply a crotch-sling-type traction splint. Else apply a full leg splint & immobilize hip.
Open Fracture. Do not push protruding bone back inside body or irrigate wound. Cover with damp dressing. Keep moist.
Hypothermia [Body temp < 95°, shivers, cool bluish skin, slurred speech, unpredictable behavior, listlessness]. Remove wet clothing. Gently wrap pt. head-to-toe in warm blankets. Heat packs underarms & groin. Conscious non-shaking pt may sip warm fluids.
Impaled Object. Remove object only if impairing airway or to stop severe external bleeding. Stack bulky cloth or gauze rolls around object to stabilize it and bind or tape the stack (not object) in place.
Internal Bleeding [One or more abdominal quadrants swollen/rigid/distended]. If pt. comfortable, leave in position found.
Otherwise position supine or lateral per patient's comfort with knees drawn up slightly. Tag "Immediate". Treat for Shock.
Shock [**R**esp.rate>30/m|**P**:Cap.Refil>2sec|**M**:NotAlert]. Position supine, keep warm. O_2 per SpO2 (p.60). If vitals decline, raise feet above heart.
Spinal Injuries [Deformity[3], posterior neck pain, tingling or inability to move/feel one or both hands/feet, loss of bowel/bladder control, or not alert].
Continue head-neck-torso immobilization done by S&R, or apply soft-collar to mobile. Move non-mobile to Vacuum Splint mattress via Scoop stretcher or 6+2 Full Body Lift. Monitor airway and breathing closely for need to logroll-drain &/ suction.
Sprain or Strain. Loosen/remove restrictive clothing, jewelry. [**RICE**] **R**est, **I**ce, **C**ompress with ACE bandage. **E**levate.
Stroke [**FAST. F**ace droops & drools, 1 **A**rm weak, **S**peech impaired, **T**ag Immediate.] Maintain airway (Suction/HAINES).Transport ASAP.
Sucking Chest Wound [Air enters thru open chest wound on inhale, bubbles out on exhale]. Apply one-way chest seal [Bolin, Hyfin, etc.] or tape plastic or use a 4x4 dressing to wipe blood away and tape the wrapper over wound taping only 3 sides.
Wounds. After bleeding stopped, wash blood/dirt away w Sterile-water[1], pat dry, & inspect. Alcohol wipe surrounding skin.
Debris-imbedded wound: Lidocaine & swab/tweeze out any visible imbedded glass/debris.
Saline flush Abrasions & Avulsions. Irrigate Cuts, (Incision, Laceration, Penetration) with Saline Irrigator. Blot skin dry.
Gaping wounds: Paint skin w Benzoin. Close w Butterfly bandages/Steri-Strips placed 1/8-1/4" apart from center to ends.
All: Apply thin layer antibiotic ointment. Cover w dressing. Secure dressing w tape/roll gauze bandage. Repeat every 24 hr.
If tourniquet was applied to stop rapid bleeding on other than an amputation, apply pressure dressing over wound (and Z-Pak if used) and loosen tourniquet slowly. If rapid bleeding restarts or any slow bleeding does not stop in 10 min., retighten tourniquet & write new time on patient. Retry every two hours to see if pressure dressing controls bleeding. If so, remove tourniquet. If not, retighten it.

HAINES Position. Place unconscious patients in **H**igh **A**rm **I**n **N**eck **E**xposed **S**pine (HAINES) position; head resting preferable on left arm, right palm on left shoulder, mouth tilted down, right knee bent forward on floor/ground.


HAINES Position

[1] Sterile Water = 2 tsp. bleach per gallon clean water. Sterile Saline = 8 tsp. salt per gallon boiled water or clean water with 2 tsp. bleach.
[2] Get water from patient's water heater or toilet tank. Get ice from patient's home.
[3] Deformity = Angulation, contusions, depression, protrusion, misalignment, or other structural abnormalities.

Baseline Vital Signs

Date Time	Blood Pressure		Pulse Rate		Respiration Rate/Min.	Perfusion (Cap Refill Sec.)	Mental LOC (A, V, P, U]	% Oxygen Sat. (SpO2)	Pupils equal & reactive?(Y/N)	Skin Temp, Color, Moisture	Pulse below injury? (Y/N)	Comments
	Systolic	Diastolic	per Min.	Quality								

Vital Signs Record

Date --- Time	Blood Pressure		Pulse Rate		**R**espiration Rate <30/Min	**P**erfusion (Capillary Refill < 2 sec?)	**M**ental Level Of Conscious-ness (A,V,P,U) [or Can Do]	Oxygen Sat. % (SpO2)	Pupils reactive &equal? (Y/N)	Skin Temp, Color, Moisture	Pulse below injury? (Y/N)	Comments
	Systolic	Diastolic	per Min.	Quality								

Patient Evaluation Checklist

Recommended Use:

1. Team Member 1 asks the questions.
2. Team Member 2 fills in answers.
3. Team Member 2 reads off points to check.
4. Team Member 1 performs checks, reports findings.
5. Team Member 2 records findings in checklist.

Patient Identification & Priority Section

Patient Name:_____ Age: _____ Race: ____ Sex: ___	Triage Status:	Date	Time
Clothing: _____ Blood Type: _____	**Minor** Walking Wounded. Skip to ***Palpation.***		
Home Address: _____ OK to Treat (Initial): _____	**Delayed** Can't getup & walk		
Contact Name: _____ Phone: _____	**Immediate**[5] R>30, P>2 / Can't Do		
	Deceased		

Patient Evaluation Checklist

History

- **L**evel **o**f **C**onsciousness (Baseline & Trend)

- **S**ymptoms (What patient Reports)
- **A**llergies.
- **M**edications.
- **P**ast Medical Problems.
- **L**ast Oral Intake.
- **E**vents causing injury (Method of Injury)

		Notes
	Level **O**f **C**onsciousness: **A**lert & Oriented _. Responds to **V**oice _. Reacts to **P**ain _. **U**nresponsive/**U**nconscious _. (If **A**lert & Oriented [knows name, location, what happened], ⇨ History. Otherwise check for Medical tag, ⇨ Observations.)	
History	**S**ymptoms (Chief Complaint): _____ Pain (1-10): ___ Patient heard/felt "Snap" [fracture] _, "Pop" [sprain/strain] _. Pain: Sharp _, Dull _, Constant _, Radiating _.	
	Allergies: None _. Aspirin _. Insect bite/sting/nuts (Anaphylaxis) _. Latex _. Penicillin _. Other:	
	Medications /Time last taken: Location: ⇨	
	Problems: None_. Asthma_. COPD_. Diabetes_. High BP_. Heart_ (Time Nitro taken____). Oth: ⇨	
	Last oral intake [what/when]:	
	Events [MOI]: [*Examples: Fell _'. Fell down __stairs'. Hit by____. Stepped on____. Smoke. Fire.*]	

Patient Evaluation Checklist

Observations - Evaluation of & Aid for Critical Systems.

- Airway stability problems.
- Breathing quality problems.
- Cardiac problems.
- Concussion, Close Head Trauma.
- C-Spine injury
- Decontamination
- Exposure
- Shock, Stroke.

			First Aid (p.112)
Observations (Y/N)	**A**irway	Unusual sound. ⇨Check & reset dentures, suction fluids, assist w any anaphylaxis EpiPen or asthma inhaler.	Suction | EpiPen | Inhaler
	Breathing [See p.60 for rates.]	Arrest [stops while in your care] _, or <8 Adult, <10 Child, <20 Infant ⇨ O_2 via patient-sized BVM per pg.60	O_2 v BVM til norm/no pulse
		Distress: Smoke/Gas inhalation_, Labored_, Noisy_, Gasping_, Shallow_, or Out of Range for age (p.60) ⇨	O_2 v msk/BVM until norm
		Hypoxia [SpO_2 < 95 (<90 if COPD)] _⇨1 lpm O_2 x 95(90) - SpO_2 via NRb Mask/nasal cannula.	Maintain $SpO_2 \geq 95$ (90)
		Sucking Chest Wound [air enters lung cavity thru a chest wound collapsing lung] _, ⇨	ChestSeal/3-side patch
		Flail Chest [paradoxical chest movement, one section collapses when the rest expands] _, ⇨	Bind/lay on Flail side.
		Tension Pneumo-thorax. [1 side hyper-extended, hyper-resonant, trachea pushed away] _, ⇨	Needle Decomp-MD
	Cardiac	Arrest [pulse & breathing stop] __. If AED avail., CPR while AED setup. (If no AED, tag "DEAD".)	CPR-**A**uto.**E**xt.**D**efib.
		Attack [non-trauma chest pain/pressure radiating to shoulder/arm/neck/back/abdomen] _,⇨	Pt's Nitro/325 aspirin.
	Concussion	Head trauma w LOC≠A _, ear fluid_, Pupils not Equal & Reactive to Light_ or burse behind ears/around eyes_ ⇨	O_2 v mask. Ice. **I**. [3|5]
	C-Spine	LOC=V,P/U_, or A w rear neck midline tenderness _, or extremity motor/sensation deficit _ ⇨	S-Collar mobile. Else[3|5|7]
	D-Con	SLUDGE_. If Biological _ ⇨Isolate, HazMat _ ⇨Brush, strip & wash, Radiological _ ⇨Strip & wash.	Isolate. Decontaminate.
	Exposure	Hyperthermia [body temp > 101°] _⇨ Cool & hydrate. Hypothermia [shivering, temp < 95°] _⇨ Dry & warm	Return to normal temp.
	Shock	Fails RPM_. If Diabetic & breath sweet_ ⇨Insulin, otherwise _⇨ Glucose. If blood loss ⇨ Saline IV by RN.	O_2 per SpO_2,Warm pt[3|4]
	Stroke	**FAST** [**F**ace droop/drool, **A**rm weakness & **S**peech slur at same **T**ime] _, tag **I** ⇨	Maintain airway. Calm.

Airway Problems

Signs:

- **Noisy breathing: Wheezing, gurgling, stridor, etc.**
- **Face and Throat swelling.**

Possible Problems & Treatment:

- **Dentures → Check for and reset any dentures.**
- **Debris → Log or HAINES roll and Finger Sweep or Hook.**
- **Fluids → Log or HAINES roll and Suction**
- **Asthma, COPD → Assist patient with inhaler.**
- **Swelling → Check for insect bit/sting → Assist patient with EpiPen.**

Manual Airway Suction Pump

STEP 1 Position the patient. • Roll patient into Recovery Position. • Open the mouth.	
STEP 2 Remove any visible large debris from the mouth with a gloved finger.	

STEP 3

Assemble pump and check for suction.

- Check that the suction is working by placing your finger over the end of the suction tip as you squeeze the handle of the device.

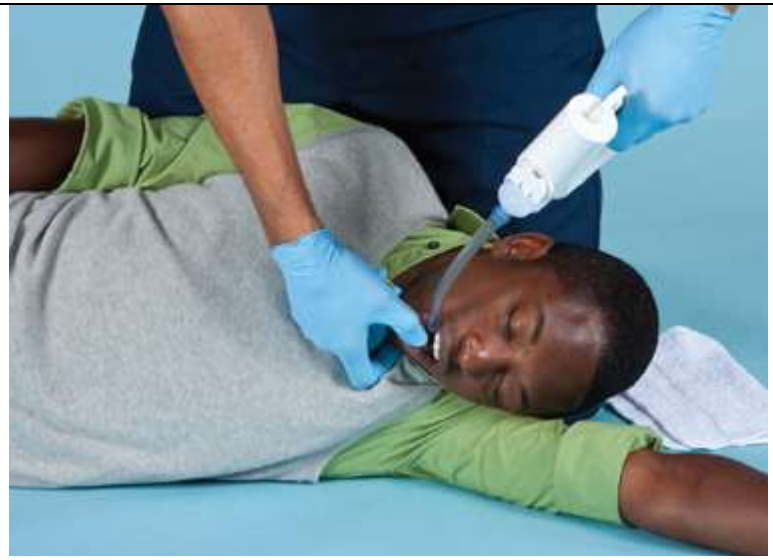
Measure tube insertion length.

- Measure from the patient's earlobe to the corner of the mouth.
- Grasp suction tube at that point to prevent inserting the tube too deeply.

STEP 4

Suction the mouth.

- Insert the suction tip into the back of the mouth.
- Squeeze the handle of the suction device repeatedly to provide suction.
- Apply suction as you withdraw the tip using a sweeping motion.
- Suction for *no more than* **15** *seconds at a time for an adult,* **10** *seconds for a child and* **5** *seconds for an infant.*



Video: Suction video

Airway Maintenance

During assessment, maintain Airway manually.

After assessment, maintain Airway in:
- Monitored patient by:

a. NasoPharyngeal Airway Adjunct (preferred),
(May use with conscious & unconscious pts.)
Video https://youtu.be/uALM3HqtTnI?t=18


Nasopharyngeal Airways

b. OroPharyngeal Airway Adjunct (if no more NPAs),
(Use only with Unconscious pts with no gag reflex.)


Oropharyngeal Airways

- Unmonitored patient by rolling patient into

High **A**rm **I**n **N**eck **E**ndangered **S**pine (HAINES) position.
(Need to breath trumps risk of paralysis.)


HAINES Position

Secondary Assessment - Observations

Breathing Problems

Signs:

- Arrest
- Distress
- Hypoxia
- Sucking Chest Wound
- Flail Chest
- Tension Pneumo-thorax

Breathing [See p.60 for rates.]	Arrest [stops while in your care] _, or <8 Adult, <10 Child, <20 Infant ⇨ O_2 via patient-sized BVM per pg.60	O_2 v BVM til norm/no pulse
	Distress: Smoke/Gas inhalation_, Labored_, Noisy_, Gasping_, Shallow_, or Out of Range for age (p.60) ⇨	O_2 v msk/BVM until norm
	Hypoxia [SpO_2 < 95 (<90 if COPD)] _⇨1 lpm O_2 x 95(90) - SpO_2 via NRb Mask/nasal cannula (p.60)	Maintain SpO_2 ≥95 (90)
	Sucking Chest Wound [air enters lung cavity thru a chest wound collapsing lung] _, ⇨	ChestSeal/3-side patch
	Flail Chest [paradoxical chest movement, one section collapses when the rest expands] _, ⇨	Bind/lay on Flail side
	Tension Pneumo-thorax. [1 side hyper-extended, hyper-resonant, trachea pushed away] _, ⇨	Needle Decomp-MD

Ventilating with Bag-Valve-Mask Resuscitator

(If there is a pulse but *no* breathing)

Select properly sized Bag and Mask for the patient. 1 month to 1 year ➔ use Infant BVM. 1 year to 12 years ➔ use Child BVM. Over 12 years ➔ use Adult BVM.	
STEP 1 Rescuer 1 positions the mask over the patient's mouth and nose.	
STEP 2 Rescuer 1 seals the mask.	

STEP 3

Rescuer 1 opens the airway.

- Places thumbs along each side of the mask and uses elbows for support.
- Slides fingers behind the angles of the jawbone.
- Pushes down on the mask with thumbs, lift the jaw and tilt the head back.

STEP 4

Rescuer 2 begins ventilations.

- Squeezes the bag slowly with both hands.
- For an adult, give **1 sec.** ventilation about every **5** seconds
- For a child or an infant, give **1 sec.** ventilation about every **3** seconds.
- Each ventilation should last about **1** second and make the chest clearly rise. The chest should fall before the next ventilation is given.

NOTE: For a child, tilt the head slightly past a neutral position. Do not tilt the head as far back as for an adult. For an infant, position head in a neutral position.

STEP 5

Recheck for breathing and a pulse every **2** minutes—

- Remove the BVM and look, listen and feel for breathing and a pulse for *no more than **10** seconds.*

If the patient is unconscious but breathing—

- Leave the patient in a face-up position and maintain an open airway, especially if there is a suspected spinal injury.
- You are alone and have to leave the person (e.g., to call for help), or you cannot maintain an open and clear airway because of fluids or vomit, place the person in a H.A.I.N.E.S. modified recovery position.
- Alternatively hold an infant in a recovery position by—
  - Carefully positioning the infant face-down along your forearm.
  - Supporting the infant's head and neck with your other hand while keeping the infant's mouth and nose clear.

If the chest does *not* clearly rise—

- Re-tilt the head, and then give another ventilation.
- Provide care based on the conditions found.

BVM Video

Bag-Valve-Mask Summary

(Use when pulse but no breathing.)

1. Visually check and manually clear or suction oral cavity (mouth).
2. Use the correct BVM size for the patient.
3. Use the correct ventilation rate for the patient.
4. Wait for chest to fall (exhale) before next ventilation.
5. Recheck for pulse every 2 minutes.
6. Stop:
    a. on first sign of breathing (a gasp, a cough, an inhale),
    b. if chest does not rise during ventilation (Airway blocked. Re-open & retry.),
    c. if chest does not fall after ventilation (Tension pneumothorax*.), or
    d. no more pulse.

Patient	Age	BVM Size	Ventilate for:	Every:
Newborn	1 day to 1 month.	Mouth-to-Mouth	½ sec.	2 seconds.
Infant	1 month to 1 year.	Small	1 sec.	3 seconds.
Child	1 year to 12 years.	Medium	1 sec.	3 seconds.
Adult	12+ years	Large	1 sec.	5 seconds.

* Elevate status to Immediate. Chest requires decompression via Thoracentesis in an ER, or via 14 to 18 gauge Intracath Needle performed by a doctor or EMT with base station or Emergency Department doctor's order.

Emergency Oxygen Administration w BVM

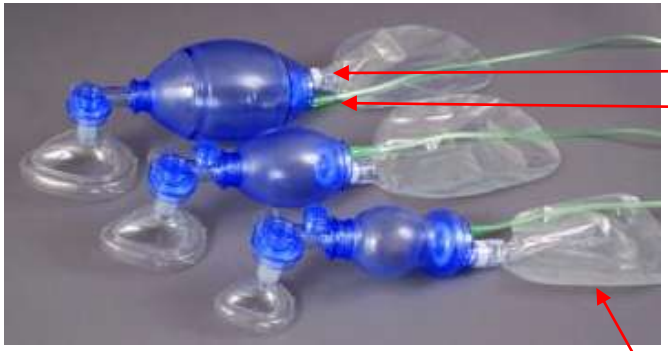
1. Open Tank Valve ¼ turn for ¼ second to clear any debris.

2. Ensure "O-Ring" is in place.

3. Insert prongs into index holes in Tank Valve.

4. Align point of mounting T-Screw with dimple in Tank Neck and tighten securely by hand.

5. Set O_2 Flow Rate on Regulator for BMV: Adult - 15 LPM, Child - 10, Infant - 6.



<u>Bag-Valve-Mask (BVM)</u>

1. Select appropriate size BVM & LPM for patient.
2. Connect O_2 Reservoir Bag to large rear port.
3. Connect O_2 supply tube to small rear port.
4. Connect O_2 supply tube to Regulator outlet barb.
5. Open Tank Valve 1 turn.
6. Partner kneels behind patient's head, seals mask over mouth and nose, opens airway via 1) Jaw Thrust, or 2) Head-Tilt.
7. Deliver 1 sec. ventilations every 5 sec's to adult, every 3 sec's to Child, every 2 sec's to an Infant.
8. Adjust Flow to keep Reservoir Bag partially inflated.

LPM = Liters Per Minute.

Hypoxia

(Low Blood Oxygen)

Caused by:

- Impaired breathing
- Smoke inhalation.
- Blood loss.
- Damage to lungs, heart.

Causes:

- Cell death.
- Victim death.

Signs:

% Saturation Peripheral Oxygen (**%SpO_2** or **SpO_2**)

< 95% for non-COPD.

<90% if COPD

Treatment:

O_2 @ 1 Liter Per Minute for every % below normal SpO_2.

1 lpm O_2 x (95 - SpO_2) or if CODP 1 lpm O_2 x (90) - SpO_2).

Use proper deliver device for require LPM.

1 - 6 LPM → Nasal Cannula.

6 - 15 LPM → Non Rebreather Mask.

Pulse Oximeter

Nasal Cannula

Non-Rebreather Mask

Sucking Chest Wound

"Sucking Chest Wound"

https://youtu.be/EdsGfSQmNrQ

Signs: https://youtu.be/SZfmGyVXFJM

Chest wounds between shoulder and navel can cause lungs to collapse either immediately or over time as air builds up inside plural (lung) cavity, especially Sucking Chest Wounds.

Air is drawn into the plural cavity though the open wound during inhalation. If air gets trapped by a flap of skin, pressure builds that collapses the lung.

Treatment:

1. Seal wound with gloved hand.

2. Partner gets an Acherman, Bolin or Hyfin [vented] Chest Seal
   or prepares a 3-taped-side flutter patch from a 4x4 gauze pad wrapper and tape.

3. Clean chest around wound.

4. Apply Chest Seal with escape valve centered over the wound.

Chest Fracture - Flail

Flail Chest

https://www.youtube.com/watch?v=RcPSK1Okbls

Symptoms:
Sharp blow to chest. Hit by or fell on an object.

Signs:

Paradoxical movement of a portion of the chest on breathing caused by multiple ribs broken in two or more places. That section retracts into chest on inhale while rest of chest expands and vice versa on exhale.

Treatment:

Bind Chest to encourage patient to breathe with diaphragm not chest.

Tension Hemo/PneumoThorax

Lung being collapsed by blood or air building in Pleural Cavity, often from a Sucking Chest Wound.

Signs:

- Difficulty breathing,
- One side of chest hyper extended.
- One side of chest hyper-resonant on auscultation.
- Deviated Trachea - Push away from affected lung.

Treatment:

- Decompression with 14 - 18 gauge 3-3.5” hypo needle inserted at bottom of 2nd intercostal space on mid-clavicle line over effected lung.
- Must be done by MD or with Hospital Base Station approval.

Cardiac.

Symptoms:

Pain starting in chest (or back sometimes in women), radiating to shoulder and arm.

Treatment:

Patient's nitroglycerin tablet, or

Offer 1) 325 mg or 4) 81 mg aspirin for self administration by chewing.

Start Oxygen via Non-Rebreather Mask per **Oxygen Administration Procedures, page 114**.
(Adult: 10, Child: 6, Infant: 3. Adjust to keep Reservoir Bag partially inflated after each inhalation.)

Treat for Shock.

(If AED, use on unconscious patients only, and only if trained to use.)

On Family members, or on others if resources permit,

If pulse but not breathing, open Airway, start Rescue Breathing.

If no pulse or breathing, start CPR.

Cervical Spine (Head-Neck) or Back Injuries.

Signs:
- Mechanism of injury (e.g., hit on head by heavy object, fell),
- Tingling or inability to move or feel fingers or toes,
- Changes in consciousness, difficulty breathing or seeing,
- Severe head or neck pain, deformity in spine.

Treatment:
Do not move unless in harm's way or transport is necessary because LAFD's ETA is greater than 30 minutes or unknown.

If movement required:

Immobilize head and neck in position found if patient doesn't straighten it themselves.

Place patient on Full-body Vacuum-Splint Mattress in area free of glass & debris.

Move patient by (in order of preference):

a) 6-Person Lift.
b) Scoop Stretcher.
c) Logroll, keeping head in same position relative to body as found.

Form Vacuum-Splint Mattress around head and neck. Pump air out.

C-SPINE

Signs:

Suspect C-Spine injury if:

- Head-Neck-Spine deformed, or
- Unresponsive, or conscious but not alert (Patient can't respond to checks), or
- Head injury (hit or fell), or
- Doesn't move head, or
- Posterior neck midline tenderness, or
- Motor / Sensation deficit in any extremity,

Treatment:

- Manually stabilize head in position found.
- Call CC for S&R Team, backboard & Body Splint.

C-Spine Stabilization

["Spinal Motion Restriction"].

If Head is in normal position, use:

- Rigid C-Collar, or

- Full-Body Vacuum Splint.

If Head is rotated, use:

- Soft C-Collar, or

- Full-Body Vacuum Splint.

Concussion
Closed Head Injury

Symptoms:

- Head ache, severe.
- Altered consciousness.

Raccoon Eyes

Signs:

- Raccoon Eyes
- Battle's Sign
- Clear fluid from nose and/or ears.

Battles Signs

Treatment:

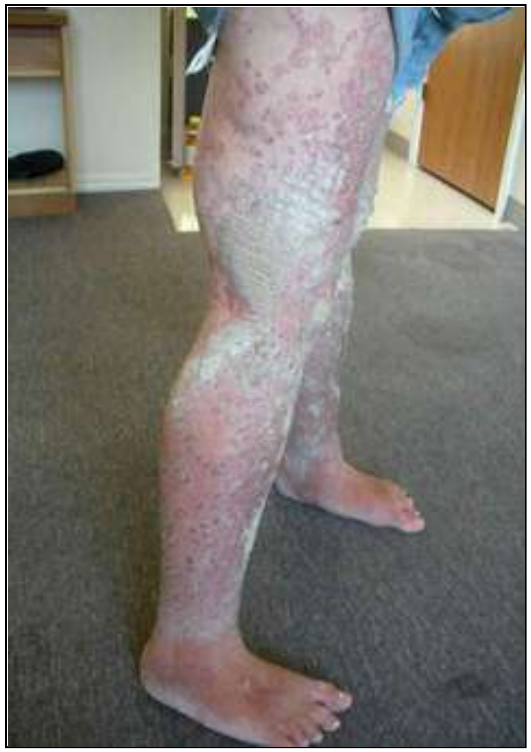
- If not in Shock, raise head end of body/backboard 1'.
- Ice Head.
- Do not put pressure on injury.

Decontamination

Signs:

Patient acknowledges or shows signs of contamination:

- Exposure to known toxic agent,
- Unknown powder or liquid on patient,
- Un-natural odor,
- Non-fire skin redness/blisters/burns,
- Radioactive ash,
- SLUDGE
  - Salivation
  - Lacrimation (tearing)
  - Urination
  - Defecation
  - Gastrointestinal distress
  - Emesis (vomit)



Treatment:

- If powder, brush off then flush.
- If liquid, flush off.
- Remove, seal & discard all clothing.
- Wash body with (soap &) water.

Exposure

Hyperthermia

Signs: Body temp > 101^{o}.

Treatment:

- Shade
- Reduce clothing.
- Cool compresses.
- Hydrate.

Hypothermia

Signs:

Core Temp < 95^{o}, Shivering, Numbness, Apathy Glassy stare, Altered LOC.

Hypothermia can occur in temperate weather due to wet clothing, wind, lack of food and water, low body fat content, blood loss, ...)

Treatment:

- Warm patient. [Wrap in warm blanket. Heat packs to chest, groin, underarms.]
- If conscious, offer warm drink.
- If patient's clothes wet, replace with dry clothes/wrap.

Shock

IF patient:

- tagged "**I**mmediate" during Triage, or
- skin is pale, ashen, cold & clammy;

Treat for Shock.

1. Lay patient supine.
2. Maintain Core-body Temp [Insolate above & below.]
3. Elevate calves & feet above heart if:
    a) no Spinal injury, or
    b) Spinal injury but vitals drop.
4. Emergency O_2 per %SpO2 from Pulse Oxymeter.

Stroke

Signs:

Face - One side droops.
Arm - One side incapacitated.
Speech - Slurred.
Time - All occurred instantly.

Treatment:

- Maintain Airway.
- Keep calm.

Patient Evaluation Checklist

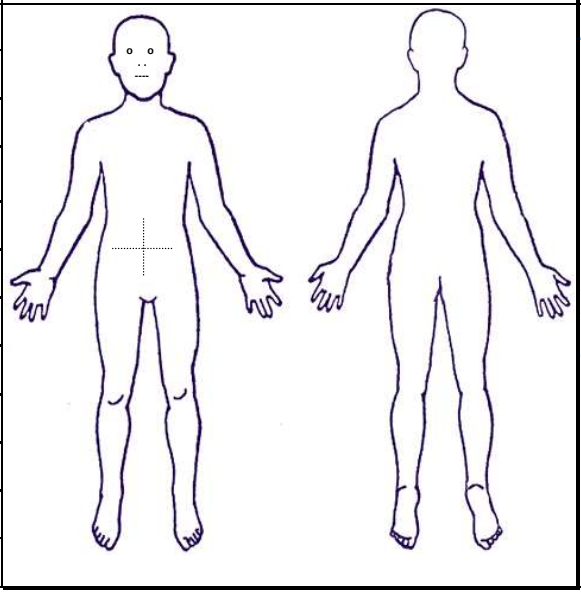
Palpation - Head-to-Toe evaluation & First Aid for Less-Critical injuries.

- Abrasions
- Burns
- Cuts, Lacerations, Penetrations.
- Dislocations
- Eviscerations
- Fractures - Limbs, Pelvis, Hips
- Impaled Objects
- Sprains, Strains, Swelling

Palpation

Either ✓ the body part / injury cell or put injury initial on image.	L R	**A**brasion	**B**urn	**C**ut, Laceration Penetration **I**mpalement	**D**isloca-tion	**E**viscer ation	**F**racture (pain on vibration)	**S**prain **S**train **S**welling
Head		3|5		3|5			3|5	3|5
Neck		3|5/7		3|5/7			3|5|7	3|5|7
Shoulder								
Chest		8	8	8			8	MD - Needle Decompress
Arm								
Hand								
Abdomen						Draw knees up		Internal bleeding Draw knees up
Pelvis							Cinch. 7	
Hip					7		7	7
Leg					F			
Foot					F			
Back					7		7	7

Either place injury initial (A, B, etc.) on image, or check the appropriate Body part-Injury cell.



First Aid for Injury Type: (See back for details.)

A: Clean & Cover.
B: Cool & Cover.
C: Irrigate & Close.
D: Relax & Reduce.
E: Plastic wrap, Warm
F: Splice (**Spl**int & **ice)**
I: Stabilize object.
S: **I**ce, **C**ompress,**E**lev

Bleeding

Significant bleeding is generally encountered by rescue workers only when freeing a victim trapped under a heavy object or when bleeding is restarted by wound cleaning.

Rapid Bleeding (spurting or fast flowing, life-threatening bleeding)

<u>Limbs</u>

Tourniquet (CAT, SWAT-T, 2” wide belt, tie, folder cloth, etc.) placed on upper limb and 2” above wound. Write time applied on patient.
Add a pressure dressing when possible & elevate.
Every 2 hours, loosen tourniquet slowly. If Pressure dressing holds, remove Tourniquet. If rapid bleeding restarts, or any slow bleeding not stopped in 10 minutes, retighten tourniquet.

<u>Neck, Shoulder, Groin, Deep or Gaping Wound</u>

Pack with Z-Pac gauze or Combat gauze and add direct pressure.

Slow Bleeding from Dirty (Debris-Imbedded) Limb Wound.

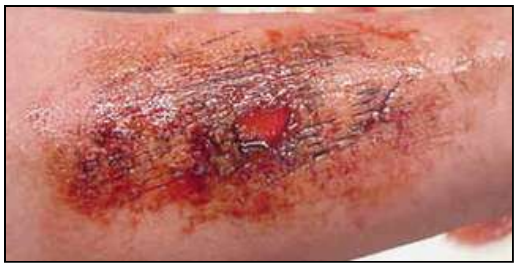
Place a rubber-strap tourniquet below (distal of) an abrasion or above knee/elbow and 2" above wound as require to stop/slow bleeding to allow inspection.

Slow Bleeding from Clean (Non-Debris-Imbedded) Wound

Direct pressure w gauze sponge/pad dressing. Pressure dressing.
If soak thru, add more pads.

Abrasions, Avulsions

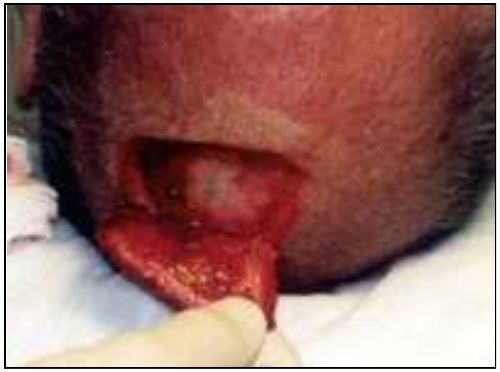
Abrasions

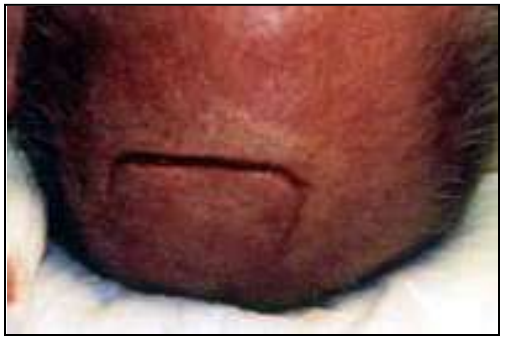


- Wash blood/dirt off with Sterile Water / drinkable water to inspect.
- Flush with Saline to balance pH.
- Lidocaine spray to numb.
- Swab or tweeze out debris (dirt, glass shards, plaster, rocks, etc.).
- Air or Pat dry.
- If still bleeding, cover with non-stick dressing or antibiotic ointment on gauze dressing.
- Add pressure dressing or direct pressure as required.
- Release any tourniquet slowly.

Avulsions

- Clean same as Abrasion.
- Place tissue flap back in place if possible.
- Apply antibiotic ointment.
- Hold tissue in place with dressing and bandage.





Amputation

<u>Signs:</u>

Completely severed bone.

Completely or partially severed tissue.

<u>Treatment:</u>

Apply tourniquet to upper limb, above knee or elbow and 2" above stump.

Cover stump/injury with saline or Sterile Water moistened dressing.

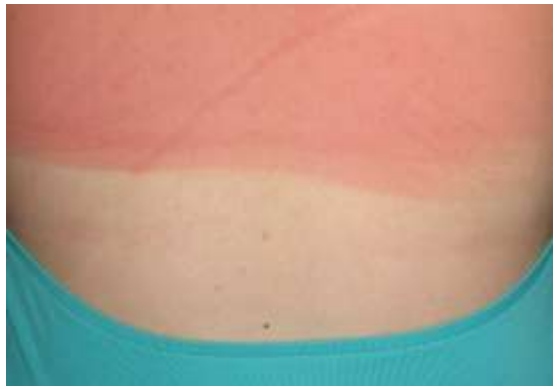
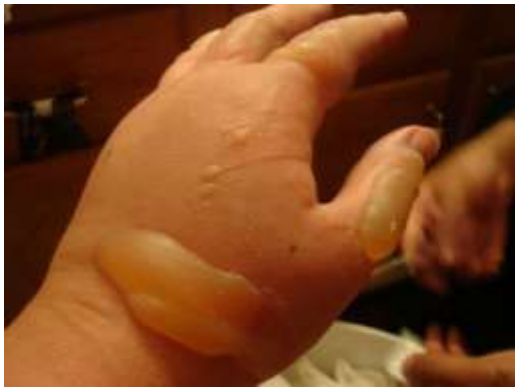
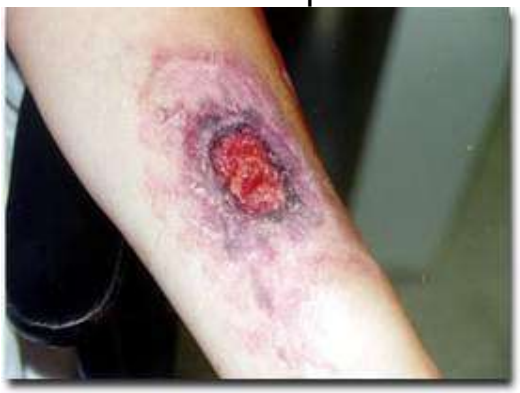
Cover dressing with plastic wrap.

Place severed part in plastic bag. Place bag in second bag. Add some ice and water.

Label second bag with patient's name/description.

All amputations: 1st tourniquet goes above the joint

Burns

1st Degree (Superficial) Redness	2nd Degree (Partial Thickness) - Blisters	3rd Degree (Full Thickness) Charred and open skin.
		

Chemical: Powder - Brush off then flush. Liquid - Flush.

1st and 2nd Degree.

- Pour clean cool water over burn (or immerse in 1 minute intervals if water is scarce) until burned area is cool to your touch. At incident site, get water from facet or toilet tank.

- Apply a hydro-jel, Aloe Vera spray or gel, or squeezed directly from plant. Do not use oils, lotions or ointments.

All Burns

- Do not remove clothing stuck to skin.

- Cover loosely with thin layer non-stick gauze.

- Treat for Shock.

- Seek immediate medical care for 2nd degree burns covering face, chest, hand, foot, genitals, or more than 10% of body, or if blisters are larger than a quarter, and for all 3rd degree burns.

- Keep patient warm (except areas burned) and hydrated.

Cuts

Saline Irrigator

Incision - Straight edge cut usually by glass.

Irrigate with Saline Irrigator, 50ml per cm length.

Butterfly Bandage

Close gapping cuts with Butterfly Bandages or Steri-Strips.

1. Optionally apply Benzoin to skin each side ¼" back from cut.
2. Attaching a strip to one side perpendicular to cut.
3. Pull cut together with fingers & attach strip to other side.
4. Apply additional strips 1/8" to 1/4" apart as needed to close cut.
5. Place anchoring strips across closing-strip tails parallel w cut.

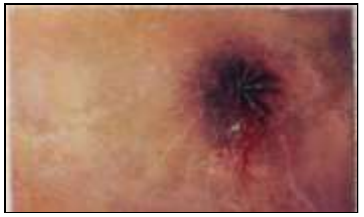
https://www.youtube.com/watch?v=C5m0CYCt59E

Steri-Strips

Laceration - Gagged edge cut usually by blunt force.

(Care for same as Incision.)

Puncture/Penetration - A hole.
Flush by compressing tissue toward wound to make it bleed some.
Irrigate with Saline Irrigator.



Impalement - Penetration with penetrating object still in place.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3047833/

Cuts - Impaled Object

Impalement is a puncture wound with the penetrating object still in place.
Generally they do not bleed much if the object is NOT removed.

Do not remove impaling object unless it is blocking airway or bleeding can't be stopped by pressure AROUND the object.

If it is protruding more than 1' either side, manually hold it while others shorten it.

Stack bulky dressings, cloth or rolled bandages around object to buttress it.

Bandage the buttressing stack to stabilize the object.

Dislocations.

Signs: Joint out of normal alignment from stretched or torn ligaments.

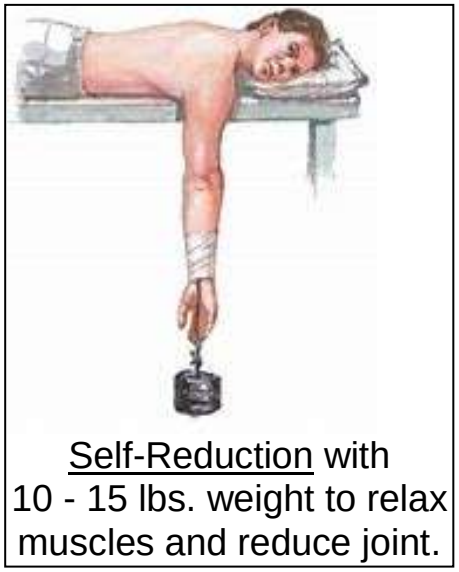
Treatment:
Remove restrictive clothing, shoes, and jewelry to eliminate tourniquet affect from swelling.
Relax Patient: Patient's muscle-relaxer / pain-killer medication. Focused deep breathing.
Check for Circulation, Motor control and Sensation (CMS) distal of dislocation.
Restore joint alignment via either:

a) Self-Reduction with weight. (May take 10 - 20 minutes.)
b) Guided Reduction. (2 - 5 minutes.)

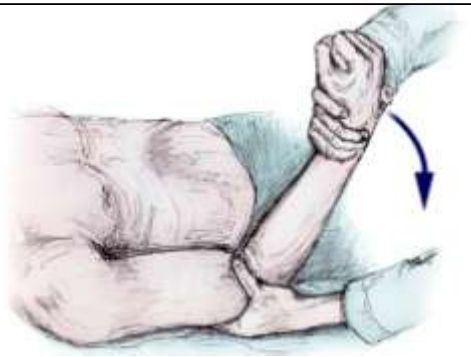
https://www.bing.com/videos/search?q=reduce+a+dislocated+shoulder+youtube&view=detail&mid=EB66A50E1D065DFBDF7FEB66A50E1D065DFBDF7F&FORM=VIRE

If CMS compromised, apply gentle traction to partially separate joint until CMS present.
If unsuccessful, elevated patient status to "**I**mmediate".

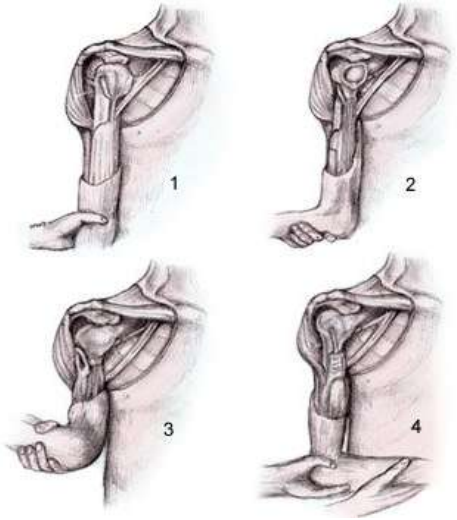
Immobilize joint after reduction and Ice.



Self-Reduction with 10 - 15 lbs. weight to relax muscles and reduce joint.



Guided Shoulder Reduction.
Position arm as shown above.
Slowly rotate arm a few degrees at a time, letting muscles relax, up to 35° to the side until shoulder pops back in place.

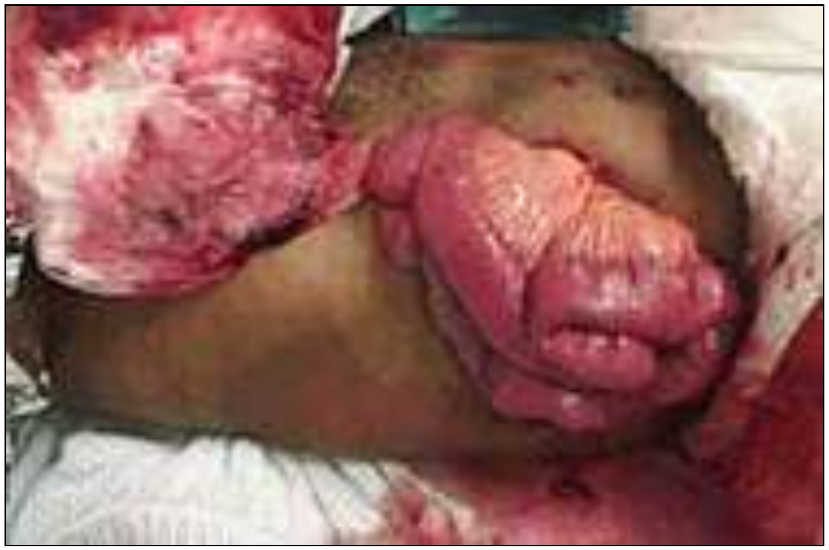


Guided Elbow Reduction.

Evisceration

Signs:

- Abdominal wound exposing organs.



Treatment:

- Position patient supine.
- Carefully remove clothing to expose wound. Avoid applying direct pressure to organs.
- Cover wound with warm saline or Sterile water moistened dressing larger than wound.
- Cover dressing loosely with plastic wrap and folder towel or blanket to maintain warmth.
- Maintain core body temperature.
- Treat for Shock.
- Tag **I**mmediate.

Fracture - Straight Limb.

<u>Closed (Simple) Fractures.</u>

Splint from joint above to joint below fracture with
SAM splint, vacuum splint, or padding and
"U"-shaped cardboard, magazine, or board.

Pad all voids between splint and body.

Wrap with tape or ACE bandage.
(Padding + Compression = Rigidity.)

Immobilize the joints above and below the fracture
Use sling if arm or shoulder, Backboard for hip, leg).

Check feeling, circulation, motor control before splinting.
Ensure same or better after.

Elevate.

<u>Open (Compound) Fractures.</u>

Splint and immobilize as above but ...

Do not push protruding bone back inside body.
Do not irrigate wound.

Place Rolled Bandage around protruding bone.
Cover protruding bone with damp dressing. Keep moist.


1. Cardboard Splint


2. Pad between splint and limb.

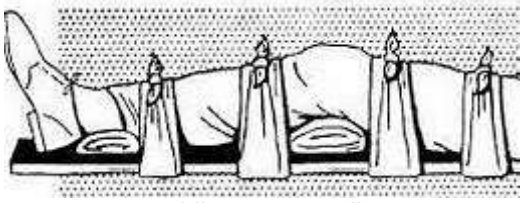

3. Secure splint.


4. Verify Circulation.


5. Ice to reduce swelling and pain. (Get ice from patient's house.)


Sam Splint


6. Immobilized joints above & below fracture, sprain or strain.


Padding a Leg Splint

Fracture - Angulated Limb.

Deformed limb. Limb bent at other than a joint.

Signs: Limb Deformity at other than a joint.

Treatment with vacuum splint:
Remove restrictive clothing, shoes, and jewelry to eliminate tourniquet affect from swelling.

Check for Circulation, Motor control and Sensation (CMS) before splinting/immobilization.

If distal CMS, immobilize bone segments in position found, and joints above & below.
(If distal CMS compromised, apply tension (& straightening) until CMS returns.)

Check for Circulation, Motor control and Sensation (CMS) after splinting or immobilization.

If CMS still compromised, elevate patient's priority to "Immediate."

Ice.

Fracture - Hip or Femur

Place on Full-Body Vacuum Splint mattress on a “transport” Backboard.

Move the patient to the Vacuum Splint mattress via Scoop Stretcher or 6-Person Lift.

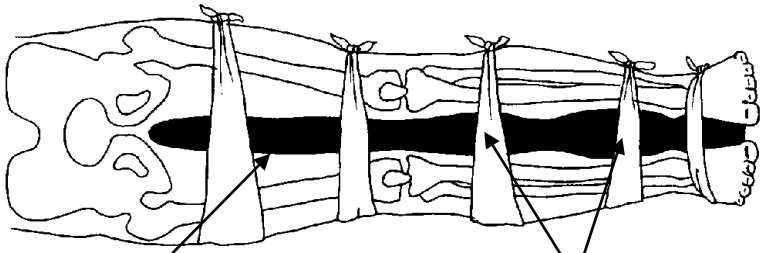
(If Hip-only fracture, Logroll on good hip to Backboard is OK.)

Form Mattress around pelvis and hips. Elevate knees if it reduces pain.

Pump air out of Vacuum Mattress.

Ice fracture. (Get ice from patient’s home.)

Alternate Anatomical Splint



Blanket. (Knots should be over blanket, not touching the patient.)

Full-body Vacuum Mattress Splint

Fracture - Open (Compound)

Signs:

Fractured Bone protruding from skin.

Treatment:

Do not push protruding bone back in.

Immobilize fracture and joints above and below fracture.

Cover protruding bone with moist dressing and plastic wrap. Keep dressing moist.

Fracture - Pelvis

Symptoms:

- Pain in center of groin.

Signs:

- Pain on downward pressure on pelvis.

Treatment.

- Apply Pelvic Belt/Sling to stabilize pelvis.

Lacerations, Wounds

Remove debris, glass shards, etc.

Flush with non-peroxide wound wash, saline or clean water.
(A hole punched in top of water bottle and squeezed makes a wound flusher. Add 1 tsp salt per 8 oz..)

Pull gapping wounds together with Butterfly bandages.

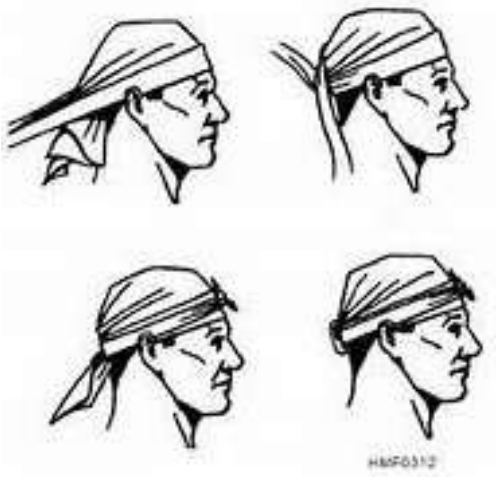
If bleeding is not excessive, cover with non-stick dressing.

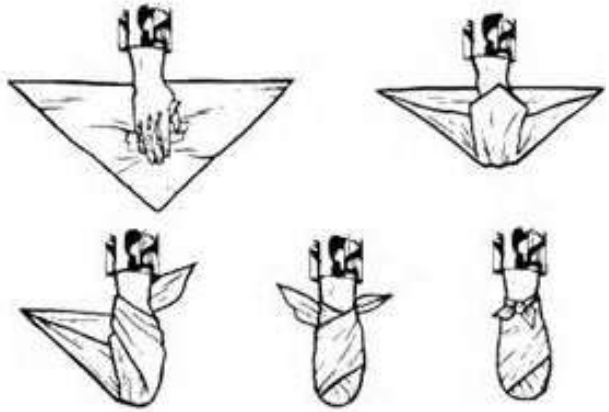
If bleeding is excessive, apply Pressure dressing.

After bleeding has been stopped for 6 hours,
clean and re-dressing wounds every 4 -6 hours to prevent infection.

Keep patient warm to prevent shock.

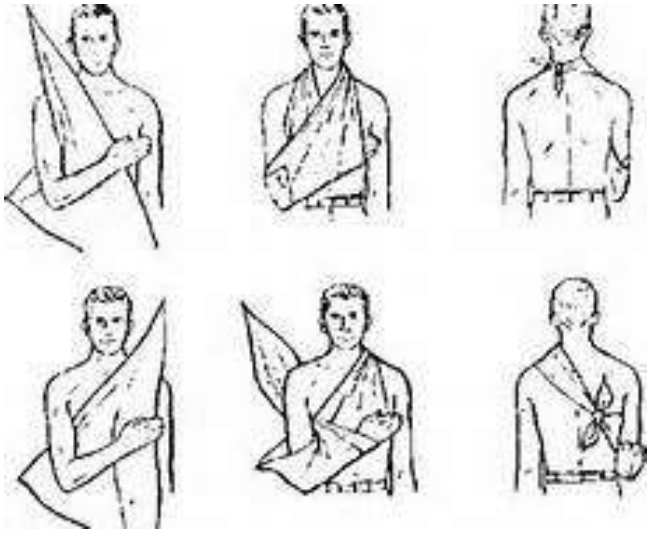
Triangle Bandage
(One Bandage, Many Uses)





Option A.

Option B.



Sprains and Strains.

Definitions:

Sprain - Stretched/torn ligament without dislocation of bone from joint.

Strain - Stretched/torn muscle or tendon.

Indications: Pain and/or Swelling of joint or body part.

Treatment:

Remove restrictive clothing, shoes, and jewelry to eliminate tourniquet affect from swelling.

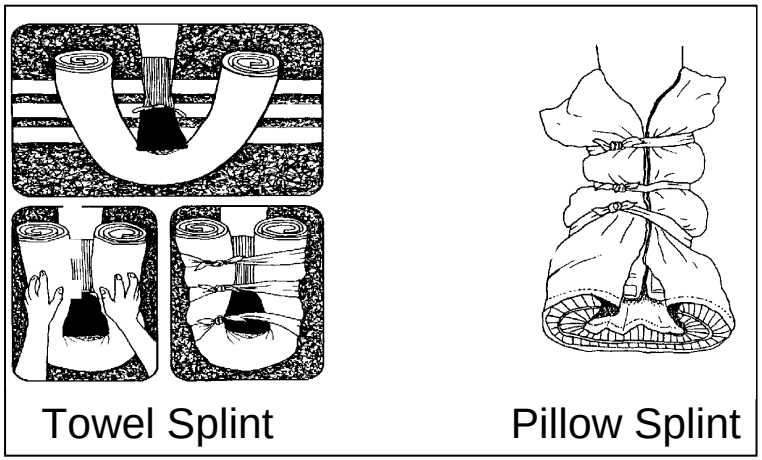
Check for Circulation, Motor control and Sensation (CMS) before splinting/immobilization.

Compress joint and/or body part with ACE Bandage to limit swelling.

Check for Circulation, Motor control and Sensation (CMS) after compression.

If CMS is compromised, elevate patient's priority to "**I**mmediate."

Ice.



Towel Splint

Pillow Splint

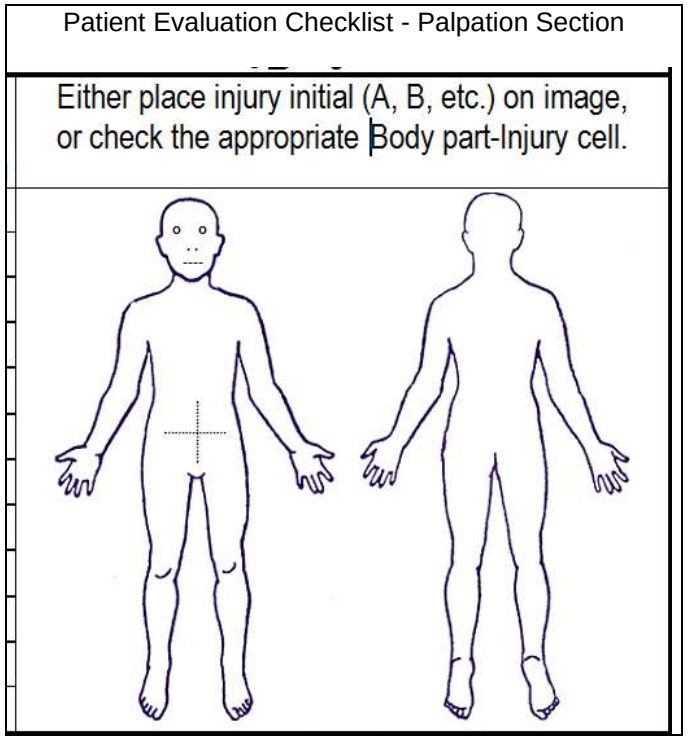
Internal Bleeding

Signs:
Internal bleeding is indicated by swelling and rigidity (turgidity) in one or more abdominal quadrants, or around or below a point of crushing weight. Removing crushing weight off a buried or trapped victim may start internal bleeding.

Treatment:
Monitor for swelling, shock and hypothermia.

If indicated,

- Elevate patient's status to "Immediate"
- Pull knees up toward chest.
- Treat for Hypothermia.
- Treat for Shock.



Wound Cleaning & Care Summary

Wash blood and dirt away with Sterile Water* or drinkable water.

Debris-Imbedded Wound

Lidocaine & swab, scrub or tweeze out any visible imbedded glass/debris.

Abrasions, Avulsions.

Flush with a non-peroxide wound wash, saline or clean water.

Cuts - Incisions [smooth, straight edges] and Lacerations [jagged edges]

Irrigate with saline or clean water.
Paint skin with Benzoin & close w Butterfly bandages/Steri-Strips placed 1/8-1/4" apart, center to ends.

All Wounds:

Apply thin layer antibiotic ointment. Cover w dressing. Secure dressing w tape/roll gauze bandage.
Repeat every 24 hr.

If tourniquet applied to stop rapid bleeding on other than an amputation,
apply pressure dressing over wound (and over Z-Pak if used) and loosen tourniquet slowly.
If rapid bleeding restarts, or any slow bleeding does not stop in 10 min., retighten tourniquet & write new time on patient.
Retry every two hours to see if pressure dressing controls bleeding.
If so, remove tourniquet. If not, retighten it.

* Sterile Water = 2 Teaspoons unscented bleach to 1 gallon water.
** Sterile Saline = 2 Teaspoons unscented bleach + 8 teaspoons table salt to 1 gallon water.

First Aid Treatment Reference

Amputation. Tourniquet 2" above stump/joint. Wrap part w damp cloth. Bag. Place in 2nd bag w ice & water. Pt. ID on bag.

Bleeding: Rapid- Limbs: tourniquet (p.85). Neck, Shoulder, Groin, or large deep wound: Z-Pak, dressing, direct pressure.
Debris-Imbedded Wound - Tourniquet to stop bleeding enough to see and remove glass/debris, then Pressure Dressing.
Clean Wound - Direct pressure w gauze sponge/pad dressing. Compression bandage. If soak thru, add more pads.

Breathing Problems [Abnormal rate/depth, or Labored.] Normal rates: Adults >12 yrs.12 -20, Children 1-12 yrs.15 -30, Infants 1 mo -1 yr.25 - 50.
Pulse but not breathing, open airway: Jaw Thrust, Head Tilt. If still not, ventilate w age-sized Bag-Valve-Mask*, inflate chest (not stomach) 1 sec. every: 5 sec. for adult, 3 sec. for child or infant, until revived or no carotid pulse for 10 minutes.
Breathing rate below normal: ventilate between patient's breaths. Breathing rapid but shallow: assist every 2nd pt's breaths.
If you have Oxygen equipment and training, use Oxygen Administration Procedure on p.60. *Nasopharyngeal airway prn.

Burns [Redness = 1st Degree. Blisters = 2nd Degree. Charred /open skin = 3rd Degree] Check under clothes. Cut away unstuck contaminated clothing & jewelry.
1st Degree - Cool with cool water[2] (running, dip or compress) until area is cool to touch. Apply hydrogel or aloe vera.
2nd Degree - Cool a 10%-body-area at a time while warming pt. (Pt's palm = 1%). Apply hydrogel every 6 hrs. Cover loosely
3rd Degree - Cover with sterile, non-stick dressing/clean sheet. Hydrate pt. Treat for Shock. Transport to a Burn Center ASAP.
Dry chemical - Brush off, then flush. Liquid chemical [wet discolored skin &/ non-fire blisters] - Flush. Soap & water wash.
Tag "Immediate" for 2nd degree burns covering face, chest, hand, foot, genitals, or more than 10% of body, or if blisters larger than a quarter, and all 3rd degree burns.

Cardiac Arrest [Pulse & breathing stop] If AED, CPR while AED set up. Otherwise, unless infinite resource, tag **E**xpectant.

Cardiac Attack (Heart attack) [Crushing chest pain radiating to arm, jaw, back, abdomen. Nausea, indigestion in women. Can't raise arm or smile.]
Patient's nitroglycerin, or chew 325 mg aspirin if not allergic, pregnant, hemophiliac or child, and no internal bleeding or blood thinners. Recline, rest.

Concussion [Deformity[3], unequal/non-reactive pupils, 'Halo' fluid from ears/nose, nausea, seizures] If no Shock, position head-end up. Ice.

Dislocation. Relax pt. Shoulder reduction: a) Prone, weight dangling arm. b) Supine forearm flexed 90° slowly rotated outward.

Electrocution. [3rd degree burn, no 1st or 2nd] If no pulse & <10 min. since event, AED or CPR. If pulse, cool & cover burns.

Evisceration [Exposed bowel] Do not flush. Cover/wrap area w plastic. Cover w folded towel for warmth & containment.

Eye injury. Completely cover both eyes, or allow 1/16" peephole for good eye, to prevent movement of injured eye.

Fractures. [Fractures present as pain or non-conductive to vibration via tuning fork/cell phone.]
Loosen/remove restrictive clothing, jewelry. If distal CMS, splint as found. Else apply traction & reposition for CMS.
Angular Fracture. [**Spl-ice**] **Spl**int or support in position found via vacuum/SAM splints. **Ice** [2] 20 min. every hour.
In-line Fracture of Arm or leg. [**Spl-ice**] **Spl**int bone(s) & immobilize joints above & below injury. **Ice** [2] 20 min. every hour.
Pelvic Fracture. [Crotch pain.] Apply SAM Pelvic Sling or 36" SAM splint cinched via belt/swath). Cinch to 33 lbs/least pain.
Hip Fracture. [Hip pain. Legs appear different lengths.] Splint in vacuum splint mattress, or on backboard and pad voids.
Femur Mid-shaft. EMRs and above may apply a crotch-sling-type traction splint. Else apply a full leg splint & immobilize hip.
Open Fracture. Do not push protruding bone back inside body or irrigate wound. Cover with damp dressing. Keep moist.

Hypothermia [Body temp < 95°, shivers, cool bluish skin, slurred speech, unpredictable behavior, listlessness]. Remove wet clothing. Gently wrap pt. head-to-toe in warm blankets. Heat packs underarms & groin. Conscious non-shaking pt may sip warm fluids.

Impaled Object. Remove object only if impairing airway or to stop severe external bleeding. Stack bulky cloth or gauze rolls around object to stabilize it and bind or tape the stack (not object) in place.

Internal Bleeding [One or more abdominal quadrants swollen/rigid/distended]. If pt. comfortable, leave in position found.
Otherwise position supine or lateral per patient's comfort with knees drawn up slightly. Tag "Immediate". Treat for Shock.

Shock [**R**esp.rate>30/m|**P**:Cap.Refil>2sec|**M**:NotAlert]. Position supine, keep warm. O_2 per SpO2 (p.60). If vitals decline, raise feet above heart.

Spinal Injuries [Deformity[3], posterior neck pain, tingling or inability to move/feel one or both hands/feet, loss of bowel/bladder control, or not alert].
Continue head-neck-torso immobilization done by S&R, or apply soft-collar to mobile. Move non-mobile to Vacuum Splint mattress via Scoop stretcher or 6+2 Full Body Lift. Monitor airway and breathing closely for need to logroll-drain &/ suction.

Sprain or Strain. Loosen/remove restrictive clothing, jewelry. [**RICE**] **R**est, **I**ce, **C**ompress with ACE bandage. **E**levate.

Stroke [**FAST. F**ace droops & drools, 1 **A**rm weak, **S**peech impaired, **T**ag Immediate.] Maintain airway (Suction/HAINES).Transport ASAP.

Sucking Chest Wound [Air enters thru open chest wound on inhale, bubbles out on exhale]. Apply one-way chest seal [Bolin, Hyfin, etc.] or tape plastic or use a 4x4 dressing to wipe blood away and tape the wrapper over wound taping only 3 sides.

Wounds. After bleeding stopped, wash blood/dirt away w Sterile-water[1], pat dry, & inspect. Alcohol wipe surrounding skin.
Debris-imbedded wound: Lidocaine & swab/tweeze out any visible imbedded glass/debris.
Saline flush Abrasions & Avulsions. Irrigate Cuts, (Incision, Laceration, Penetration) with Saline Irrigator. Blot skin dry.
Gaping wounds: Paint skin w Benzoin. Close w Butterfly bandages/Steri-Strips placed 1/8-1/4" apart from center to ends.
All: Apply thin layer antibiotic ointment. Cover w dressing. Secure dressing w tape/roll gauze bandage. Repeat every 24 hr.
If tourniquet was applied to stop rapid bleeding on other than an amputation, apply pressure dressing over wound (and Z-Pak if used) and loosen tourniquet slowly. If rapid bleeding restarts or any slow bleeding does not stop in 10 min., retighten tourniquet & write new time on patient. Retry every two hours to see if pressure dressing controls bleeding. If so, remove tourniquet. If not, retighten it.

HAINES Position. Place unconscious patients in **H**igh **A**rm **I**n **N**eck **E**xposed **S**pine (HAINES) position; head resting preferable on left arm, right palm on left shoulder, mouth tilted down, right knee bent forward on floor/ground.

HAINES Position

1 Sterile Water = 2 tsp. bleach per gallon clean water. Sterile Saline = 8 tsp. salt per gallon boiled water or clean water with 2 tsp. bleach.
2 Get water from patient's water heater or toilet tank. Get ice from patient's home.
3 Deformity = Angulation, contusions, depression, protrusion, misalignment, or other structural abnormalities.

Baseline Vital Signs

Date Time	Blood Pressure		Pulse Rate		**R**espiration Rate/Min.	**P**erfusion (Cap Refill Sec.)	**M**ental LOC (A, V, P, U]	% Oxygen Sat. (SpO2)	Pupils equal & reactive?(Y/N)	Skin Temp, Color, Moisture	Pulse below injury? (Y/N)	Comments
	Systolic	Diastolic	per Min.	Quality								

Patient Evaluation Checklist

Extended Care.

Patient positioning, after evaluation and First Aid, to aid in homeopathic healing and patient comfort while awaiting transport and during transport.

Extended Care	Provide per 1st row matching patient's condition:					**Life Support**	**Waiting** [w monitoring]			**Transport**		
		Breathing	**Pulse**	**LOC**	**Injury or (assumed)**	**Care**	**Position**	**Airway Mgmt**	**Fluid Mgmt**	**Position**	**Airway Mgmt**	**Fluid Mgmt**
	1	No	None		Cardiac Arrest	CPR + AED	If no carotid pulse & no spontaneous breathing in 10 min., move to Morgue.					
	2	No	Carotid		Respiratory Arrest	BMV + O_2	Continue until breathing, or until no carotid pulse for 10 minutes.					
	3	Shock p114	Carotid	≠ A	Shock + Head-Neck	Cool head Warm pt	Supine*	Naso Airway*	Suction*	FB Vac Splint	Naso Airway	Roll Pt.
	4	Shock p114	Carotid	≠ A	Shock	Warm Pt.	Supine ^*	Naso Airway*	Suction*	Supine	Naso Airway	Roll Pt.
	5	Yes	Radial	≠ A	Head-Neck	Cool Head	BB-head hi*	Naso Airway*	Suction*	FB Vac Splint	Naso Airway	Roll Pt.
	6	Yes	Radial	U	(Airway at risk)	Maintain Airway	HAINES	HAINES	HAINES	FB Vac Splint	Naso Airway	Roll Pt.
	7	Yes	Radial	A	Spine|Pelvis|Hip	FB Vac Splint	Supine	Patient	Suction	FB Vac Splint	Patient	Roll Pt.
	8	Distressed	Radial	A	Rib|Chest	O_2 per SpO_2	Tripod	Patient	Patient	Fowler	Patient	Patient
	9	Normal	Radial	A	Other than above	1st Aid (p.85)	Comfort	Patient	Patient	Comfort	Patient	Patient

^ Raise Calves & Feet above heart if BP falls.

* HAINES Position if patient cannot be monitored continuously.

Patient Evaluation Checklist

Vital Signs Record

Date --- Time	Blood Pressure		Pulse Rate		**R**espiration Rate <30/Min	**P**erfusion (Capillary Refill < 2 sec?)	**M**ental Level Of Conscious-ness (A,V,P,U) [or Can Do]	Oxygen Sat. % (SpO2)	Pupils reactive &equal? (Y/N)	Skin Temp, Color, Moisture	Pulse below injury? (Y/N)	Comments
	Systolic	Diastolic	per Min.	Quality								

Standard Tasks

(What Medical Teams Do.)

1. Primary Assessment.

2. Triage.

3. Secondary Assessment

4. Life Support.

5. Patient Transport.

Monitor Breathing.
- Position for easy of breathing.
- Maintain Airway via adjunct or HAINES.
- Oxygen if labored or hypoxic.
- BVM if breathing stops in our care.

Prevent Aspiration.
- Monitor and Suction as necessary, or HAINES position if you must leave.

Prevent Hypothermia.

Provide Hydration,
- if Patient can self-hydrate.

Provide Comfort.
- Vacuum Splint or air mattresses.

Instill Hope:
- Refer to as “patient”, not “victim”.
- Do not discuss patient’s condition in front of them.
- Remove the deceased, hysterical.

Additional Treatment if patient held at a Treatment Area or "Safe-Place" until hospitals opens.

Re-Assess Vital signs for stable patients every 15 minutes, unstable every 5 minutes, especially Airway, Breathing & Shock. Move to appropriate area on status change.

Internal Bleeding. Indicated by hardness and swelling in one or more quadrants of the abdomen. Raise status to "Immediate". Keep warm and relaxed.

Shock. Treat all "Immediates" for Shock by raising feet 8 - 12" above heart if no spinal or head injury and no neck, back or hip pain when doing so.

Swelling from Fractures, Burses, Sprains, Strains including Closed Head Trauma. Ice for 20 minutes each hour for first 24 hours.

Wounds. Re-dressing wounds every 24 hours to prevent infection. Keep patient warm.

Instill Hope. Refer to the injured as "patients", not "victims". Be positive, not shocked. Don't discuss patient's condition in front of them, even the unconscious. Cover & move deceased's to Morgue (Black tarp). Move hysterical to a separate area.

Conscious Patients. Pain Killers from patient's home may be giving for self-admin. Offer hydration (and food) for self administration. Assist with hygiene needs.

Unconscious Patients: Monitor for breathing problems caused by regurgitation or tongue falling to back of mouth closing airway. Logroll, drain or suction fluids. Reopen airway by Jaw-Thrust for spinal injured or Chin-lift Head-tilt. If you must leave patient unattended, place patient in High Arm In Neck Endangered Spine (HAINES)

HAINES or Left Lateral Position

Standard Tasks

(What Medical Teams Do.)

1. Primary Assessment.

2. Triage.

3. Secondary Assessment

4. Life Support.

5. Patient Transport.

Closed Head, Neck (Cervical Spine) and Back Injuries.

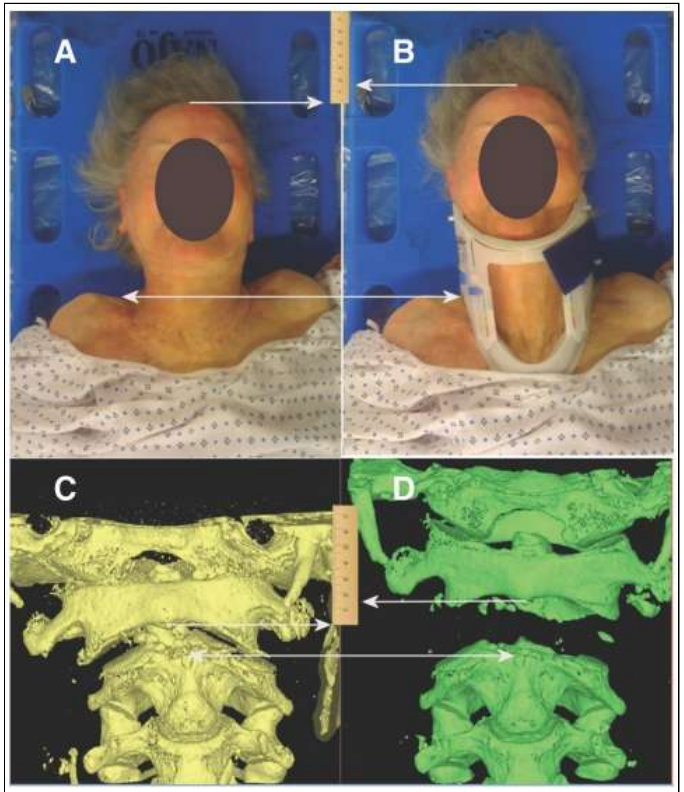


Figure 1. (*A–D*) Gross displacement (*B* compared with *A*) of the head relative to the body (16 mm) when an extrication collar was applied in the presence of a severe instability was consistent with the internal displacements between the occiput and the subaxial cervical spine (14 mm) measured from fine-cut CT examinations in this fresh whole human cadaver (*D* compared with *C*).

Improperly sized or used C-Collar can cause injury. Use only on mobile patients.

Much safer, and more comfortable to immobilize patient & injury with a Vacuum-Splint Mattress.

C-Collar NOT Required.

Package for Transport.

(Immediates & Delayeds Only)

Packaging depends on Injury:

Injury	Packaging Method Preferred				
	Full-body Vacuum Splint on Backboard	Limb Splint and Backboard.	Blanket Pads or air mattress on Backboard	Reclined Passenger Seat	Upright Passenger Seat
Head Trauma				X	X
Spinal injury	X				
Shoulder dislocation					X
Arm fracture					X
Rib fracture					X
Pelvic fracture	X				
Hip fracture	X				
Femur fracture	X				
Lower Leg fracture		X			
Feet injury			X	X	
Other			X		

Package Patient for Transport

Prepare a transport “bed” appropriate for patient’s injuries:

- Closed Head, Neck, Spinal injury, Pelvis and/or Hip (Femur neck) fracture,
  - Old backboard with a vacuum-splint mattress.
- Other injuries.
  - Old backboard with blankets or air mattress.

Ensure patient has been stabilized:

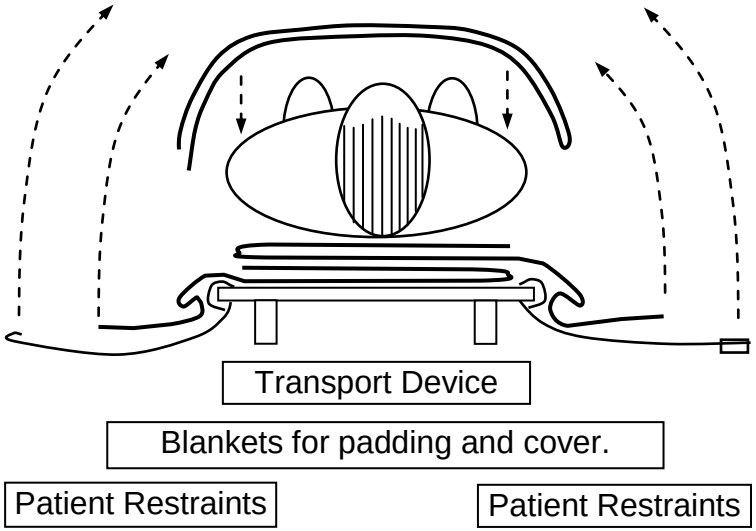
- Bleeding stopped, or minimized with controls (pressure dressing, tourniquet) in place.
- All wounds covered.
- Fractured limbs splinted, or immobilized and secured.

Help S&R or Transport Team place patient on the prepared transport bed.

Fill all voids between patient and device with blankets/towels, or contour vacuum splint mattress to fill.

Wrap patient appropriately for the weather to prevent hypothermia.

Secure with over-shoulder restraints plus waist and at least one leg. (Tie a bad leg to the good one.)



Standard Task Summary

1. Primary Assessment (Find the living. Ensure patent airways.)

Size-up & Stop Critical Bleeding.
Permission?
Alive?
Check for Breathing.
Open Airways.

2. Triage. (Prioritize & Sort Casualties for Evaluation, Treatment, Transport):

Immediate	Compromised Respiration, Perfusion &/ Mental status (RPM).
Delayed	RPM OK but can't **S**tand and walk.
Minor	Can Stand and walk.

3. Secondary Assessment (Find the injuries and instill Hope.)

History:	**S**ymptoms, **A**llergies, **M**edications, **P**ast Problems, **L**ast oral intake, **E**vents.
Observations.	Care for **Vital ABC'S** (**A**irway, **B**reathing, **C**irculation, **C**-Spine, **S**hock).
Palpations:	**A**brasions, **B**urns, **C**uts, **D**islocations, **E**lectrocutions, **F**ractures, **S**prains/**S**trains.
Essential Care:	First Aid & Patient positioning based on injury.

4. Life Support. Buy Time until hospitals open.

5. Patient Packaging for Transport (Immediates & Delayeds).

Standard Tasks

1. Primary Assessment.
2. Triage.
3. Secondary Assessment.
4. Life Support.
5. Package Immediates & Delayed for

Monitor Breathing.
    Semi-Fowler position if possible.
Prevent Aspiration.
    Fowler or Left Lateral position.
    Suction as necessary.
Wound Care.
    Change bandages every 24 hours.
Prevent Hypothermia.
Provide Hydration,
    if Patient can self-hydrate.
Provide Comfort.
    Vacuum Splint or air mattresses.
Instill Hope:
    Refer to as “patient”, not “victim”.
    Do not discuss patient’s condition in front of them.
    Remove the deceased, hysterical.

6. Maintain Life and Hope until hospitals open.

Standard Tasks - Summary

1. Primary Assessment - Catch the Quick Killers
   (Medical Team does in Lightly damaged buildings.)
   (S&R Team does in moderately damage buildings.)

   Open blocked Airways.
   Stop severe Bleeding.
   Treat for Shock.

2. Triage (Prioritize & Sort Casualties):
   - Immediate
   - Delayed
   - Minor

   Check RPMS.
   Tag victims.
   (Done Med. Team's during Primary.)
   (Done by Med. Team of rescued pts.)

3. Secondary Assessment - Catch the Slow Killers
   - Evaluate Injuries.

     Head-to-Toe Injury Evaluation,

   - Treat the Injuries we can.

     First Aid

4. Life Support
   Maintain Life and Hope until hospitals open.

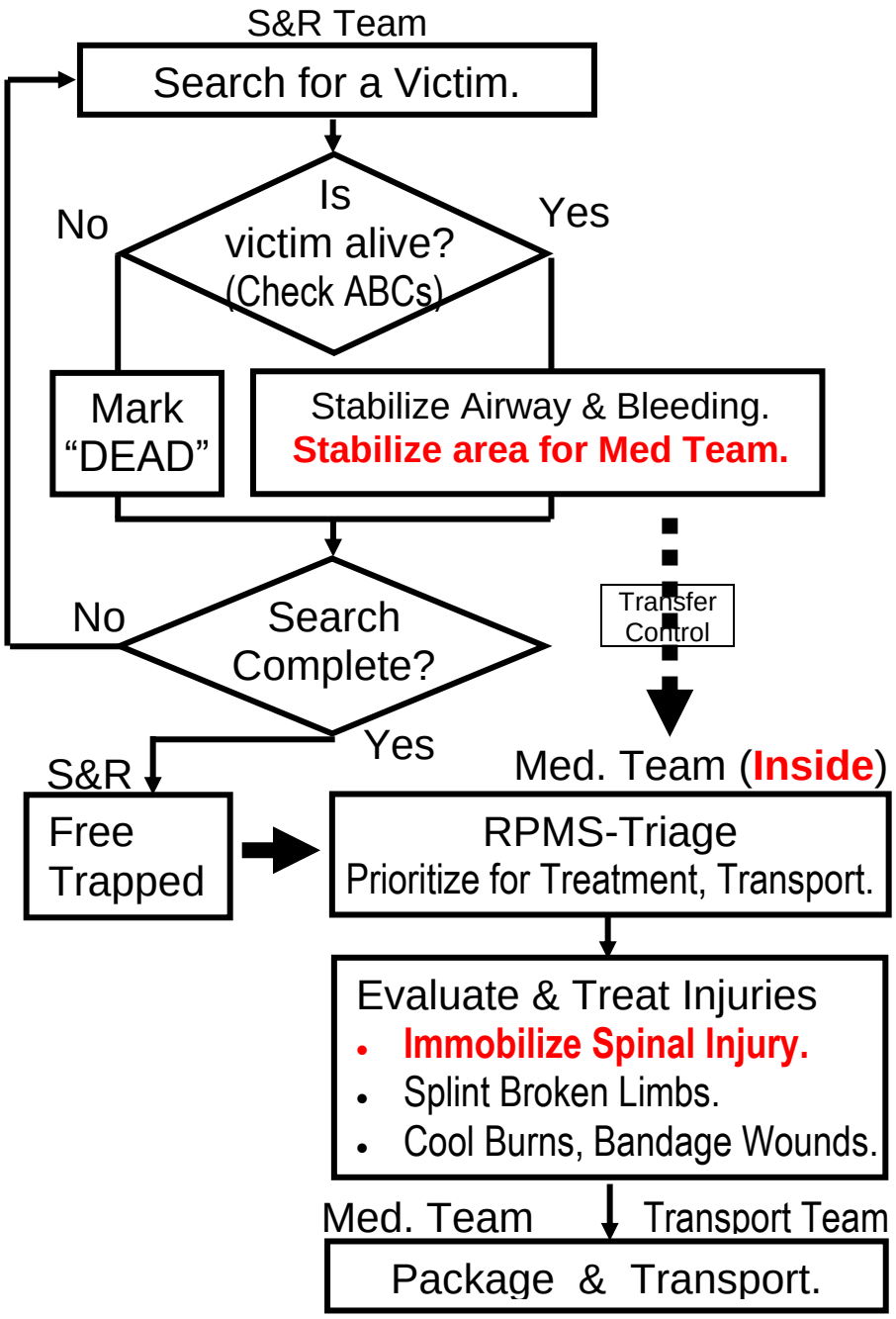
   Monitor Airways.
   Prevent Hypothermia.
   Change dressings.
   Feed & hydrate.
   Help with hygiene.

5. Package Immediates & Delayed for Transport.

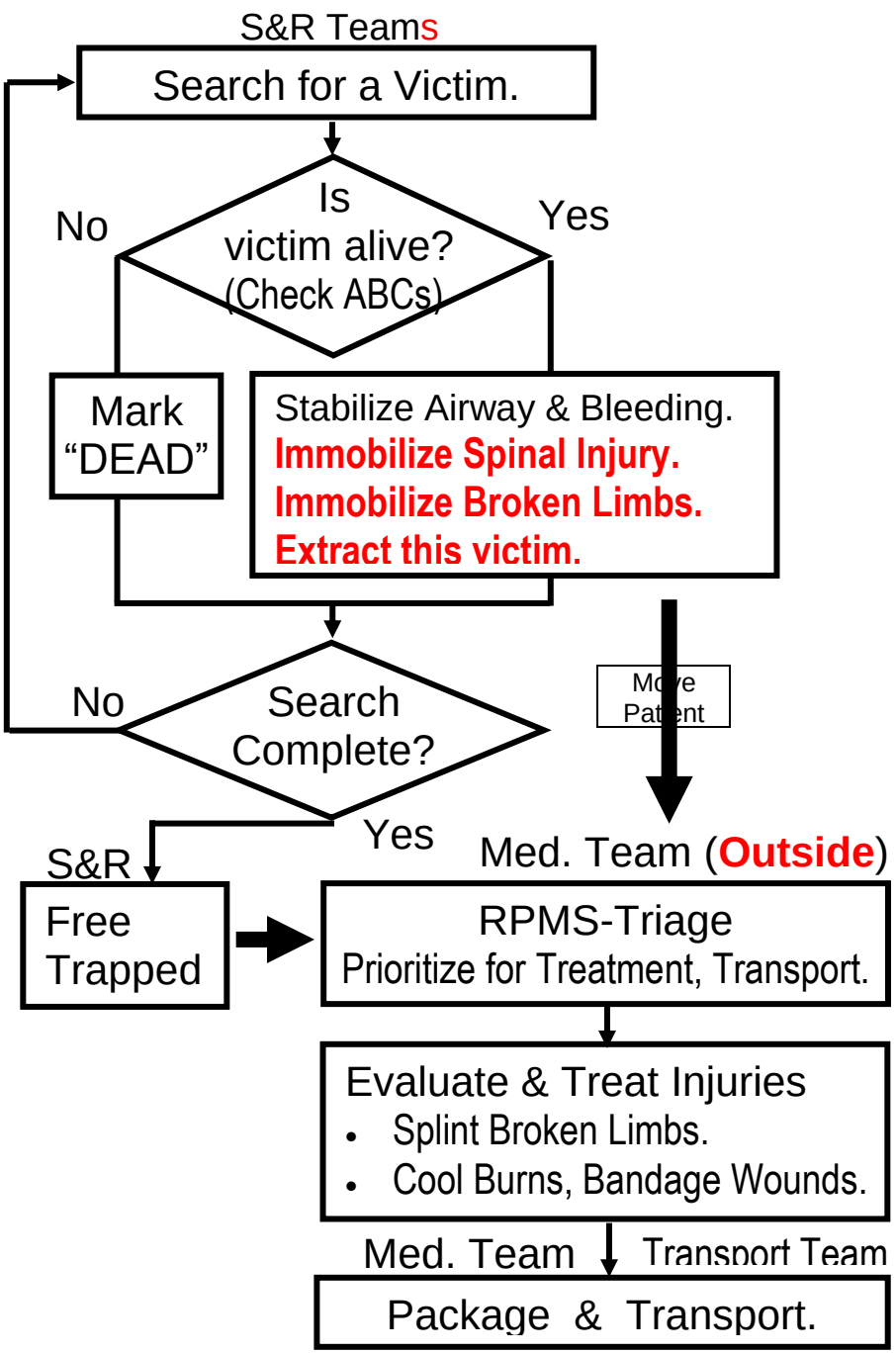
   Assist.

S&R and Med. Team Standard Tasks.

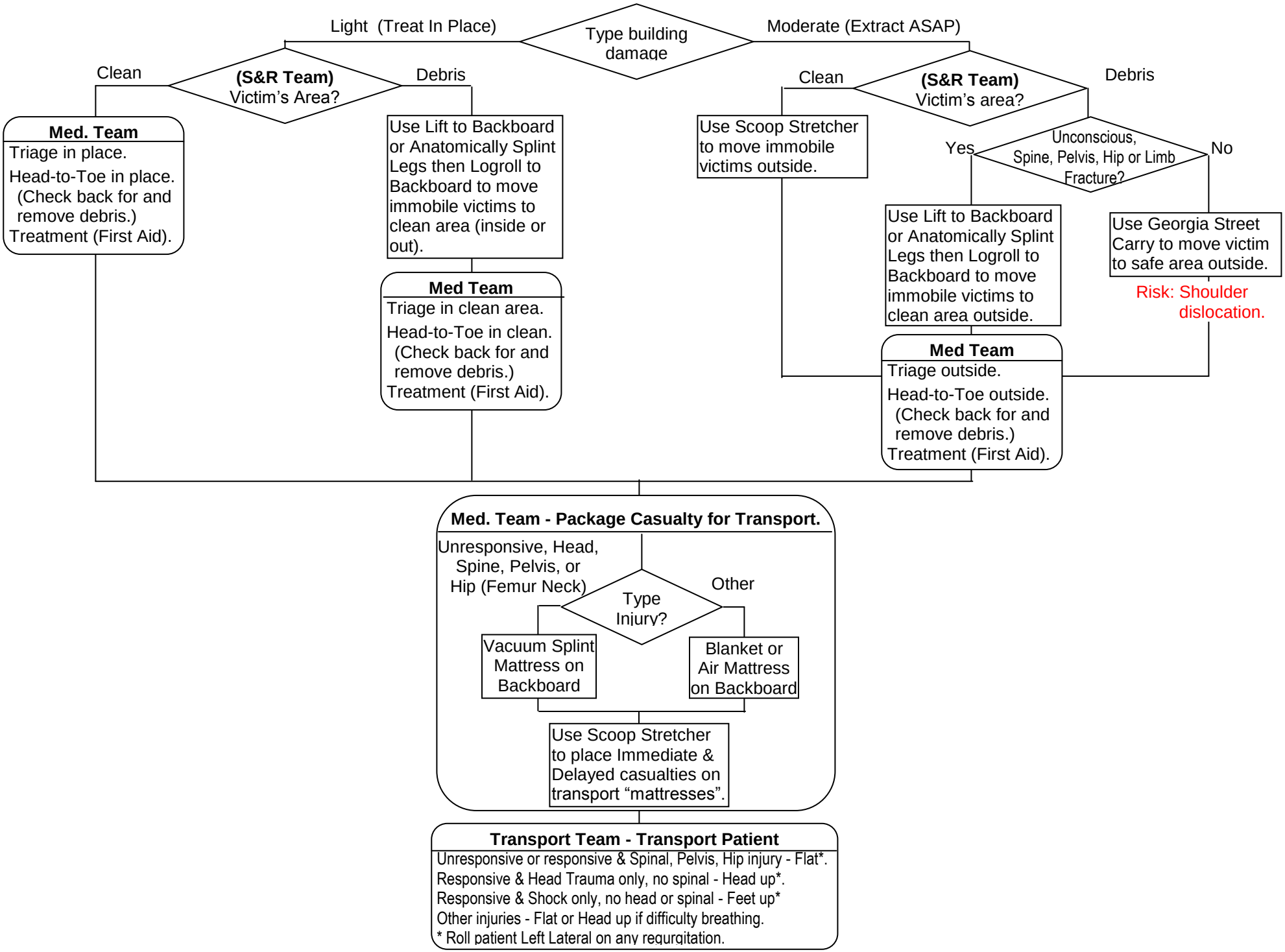
Lightly Damage Building (Treat in Place)



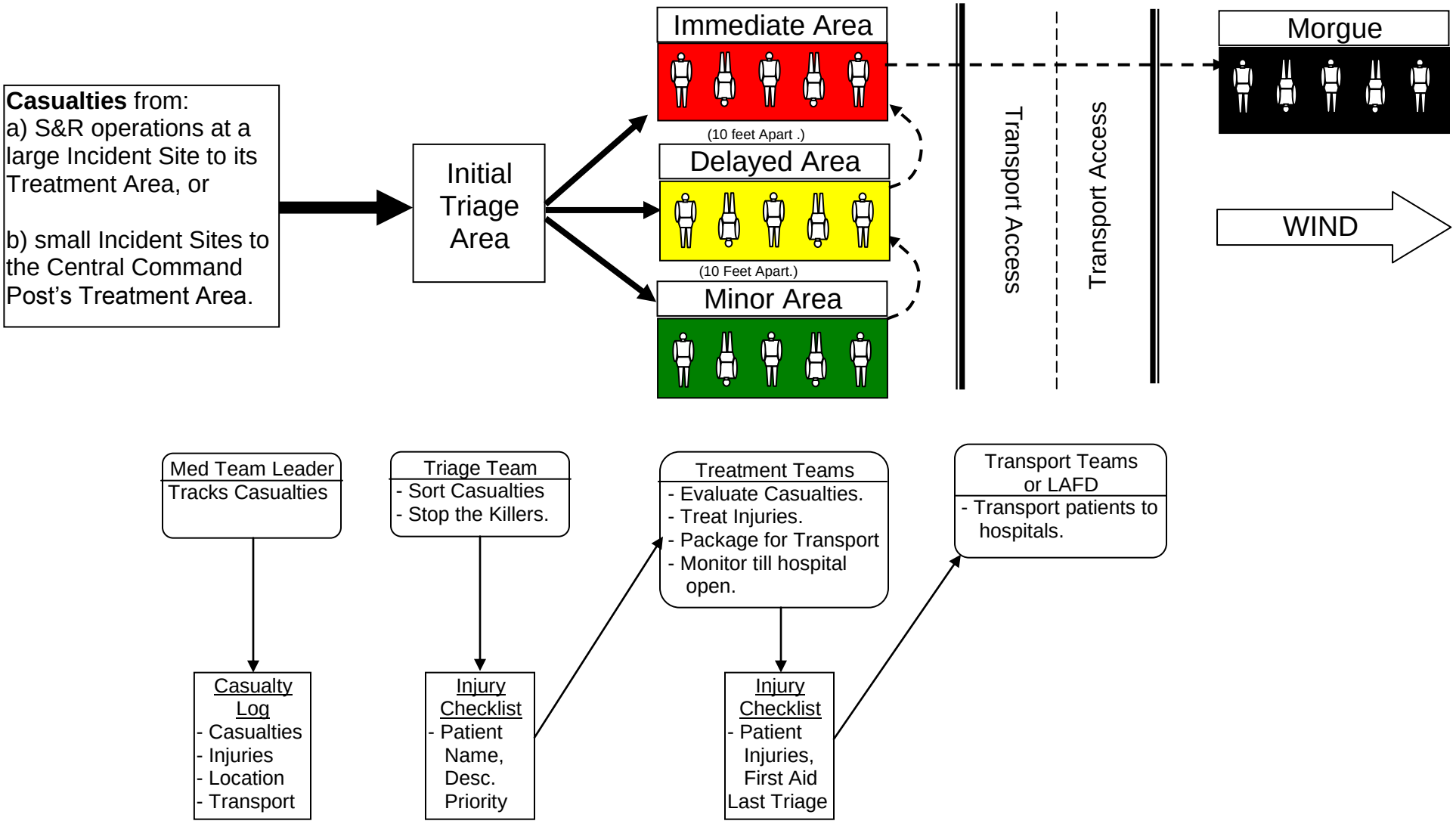
Moderately Damaged Building (Extract ASAP)



Casualty Extraction, Packaging and Transport Details



Treatment Areas



Casualty Status Log

Medical Facility Plan (ICS 206)

Facility Name	Address / Cross Street	Contact Phone / Frequency	Travel Time (Min)	Trauma Center?	Burn Center?

Casualties

Location:	Person Reporting:	Date:	Time:	Page No.	of	

Casualty Name and/or Description (Race, Sex, Age, Body type, Clothing, Height, Weight, etc.)	Priority **Immed** **Delay** **Minor** **Dead**	Injuries Treatments given (✓) Completed	Time Last Triage	Own Transportation?	Safe-place Care?	Transport: Move Here (X)	Transport: Found Location --------------- Holding Location --------------- Final Location	Transport: Driver Assigned	Transport: Date & Time Out	Transport: Date & Time Delivered
							Incident Loc.:			
					Y		"C.P."/Safe-place adr:			
					Y		Med. Facility:			
							Incident Loc.:			
					Y		"C.P."/Safe-place adr:			
					Y		Med. Facility:			
							Incident Loc.:			
					Y		"C.P."/Safe-place adr:			
					Y		Med. Facility:			
							Incident Loc.:			
					Y		"C.P."/Safe-place adr:			
					Y		Med. Facility:			
							Incident Loc.:			
					Y		"C.P."/Safe-place adr:			
					Y		Med. Facility:			

Disaster Psychology

Dealing with Team Members

Signs of Stress.

Fatigue - From overwork, association or compassion.
Hyperactivity
Headaches, Chest pain, Nausea
Irritability, Anger, Blaming others.
Forgetfulness. Loss of Focus.
Withdrawal, Isolation, Inaction.

Addressing Stress.

Frequent Breaks.
Review GuideBook.
Rotate from High-Stress to Low-Stress assignments.
Proper eating and hydrating.
Proper rest and sleep.
Comradeship.
Debrief.

- What did you see?
- How did it make you feel?
- Listen.

Dealing with Spontaneous Volunteers

Stages of Help:

Anxious to help.
Willing to follow instruction but impatient.
Forget or disregard instruction & safety precautions.
Anger at rescuers.

Managing Volunteers

Must review GuideBook Procedure before receiving an assignment.
Team them with trained Team member.
Suggested Assignments:

- Damage Survey Team member.
- Scout routes to hospitals.
- Setup Command Center and Treatment Area tents.
- Cordon off unsafe roads and Setup Detours.
- Transport rescue equipment.
- Transport patients.
- Medical Teams if they know first aid.
- Command Center Treatment Area if a Medical Professional.

Dealing with Patients

Don’t look shocked on seeing patient's injuries.

Don't discuss patient's condition in their presence.

Be positive but don't promise what you can't deliver.

Dealing with Survivors

Stages of Grief:

Stunned, Overwhelmed, Emotionless.
Denial.
Anger.
Self Blame and Bargaining.
Depression.
Acceptance.

Don't

Dealing with Death.

Family

Children: Kneel down to their eye level to talk with them.

Complete from CERT Field Ops Guide

Review **HERO Field GuideBook**.

Preface

In *Phase 1 - Individual Response*, review:

- Task 1. Initial Response at Your Home or Business.
- Task 1.b Initial Response at a Mass Casualty Incident.

In *Phase 2 - Team Response*, review:

Section 1. Command Post Operations, review:

- Task 8. Medical - Manage Medical Treatment Area

Section 2. Incident Management, review Med Team steps in:

- Task G. Manage Heavily Damaged Building.
- Task H. Manage Moderately Damaged Building.
- Task I. Manage Lightly Damaged Building.

Section 3. Incident Response Team Procedures, review:

- Task g. Triage
- Task h. Injury Evaluation and Treatment.
- Task i. Patient Packaging and Transport.

Next Step

Take First Aid Training. Examples:

First Aid.

Red Cross - “Family First Aid and CPR Online - Adults & Pediatric” ($35)

Wilderness First Aid Course (WFAC): http://wildernessfirstaidcourse.org

Medical First Responder.

Red Cross - “Emergency Medical Response.” (60 hours)

Wilderness Medicine Institute (WMI), National Outdoor Leadership School (NOLS): http://www.nols.edu/wmi/courses/

Emergency Medical Technician (EMT)

UCLA (100 hours.)

Wilderness Medical Associates (WMA): http://www.wildmed.com/