

Understand The Concept of Search And Recue Techniques and Continuum of care

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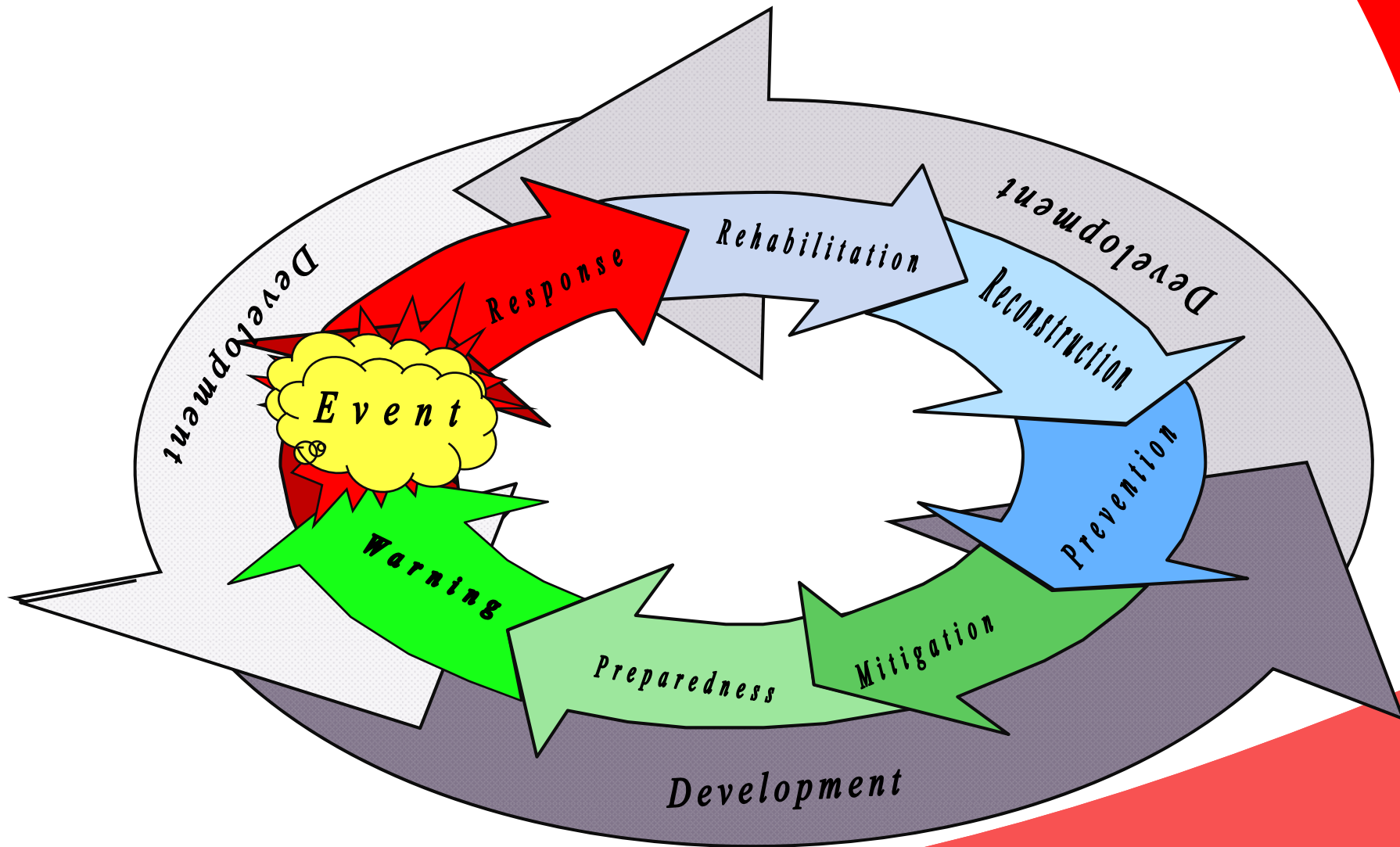
Indian Red Cross

Gujarat

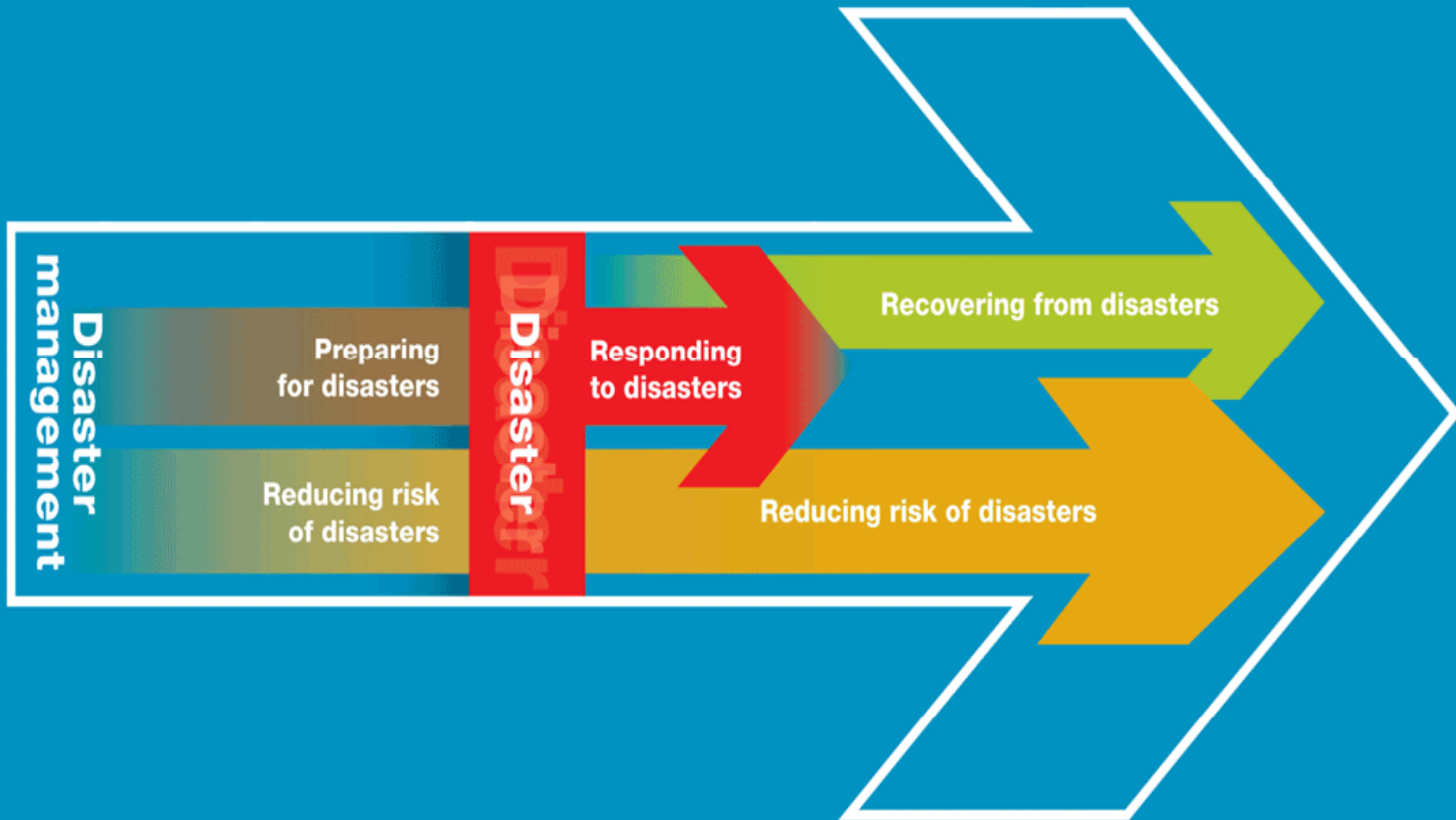
Disaster and Disaster management

- ⦿ Do disasters just 'happen' ?
- ⦿ Should they be expected & planned for?
 - Then Survival depends on;
 - Self preparation
 - *Living & building in sync with the environment*
 - Community & Family
- ⦿ Is there any expectation of help from outside?

Where does SAR fits in 'Cycle of Disaster'..



Where does SAR fits in 'Cycle of Disaster'..



Who is at Risk ? What is at Risk?



Why is it at Risk ?

1. *Underlying Causes :*

Poverty
Limited access to :
-Power structure
-Resources
Economic system
Cultural factors

2. *Dynamic Pressures :*

Lack of:
-Institutions
-Education
-Training
-Skills
-Investment
-Markets
Wider forces:
-Population
-Urbanization
-Environment degradation

3. *Unsafe Conditions :*

Fragile physical Environment:
-Dangerous locations, buildings & infrastructure
Fragile local economy
-Livelihood at risk
-Low income

Disaster

**Risk
(or
disaster)**

=

Vulnerability

x

Hazard

Hazard

Trigger Events :

Earth-quake
Cyclone
Flooding
Landslide
Drought
War
Conflict



Our Goal is ..

I Provide timely intervention to survivors of a crisis or an emergency or a disaster.

Search and Rescue

- ◎ Search – To look through in a place or in an area carefully in order to find something missing or lost .



- ◎ Rescue – To free or deliver victim from confinement.



Search and Rescue

- Search and Rescue are defined as immediate actions performed by trained personals at emergency scenes to remove some one from immediate danger, or to extricate them if they are already trapped.
- Who will do it and how ?
 - Volunteers, community members, disaster response teams, administration, forces ..
 - How soon they will be available

Search and Rescue...Safety of the responder

- ◎ Safe guard the life of rescuer- acknowledged the most important person in the rescue attempt is the rescuer.
- ◎ Rescue lightly trapped victims first in order to rescue the greatest number of people in the short amount of time.
- ◎ As a volunteer worker, confine your efforts to light search and rescue; that is relatively un complicated extrication.

Basic principles of SAR..Precautionary measures..



- ⦿ How to approach building Do's & Don't
- ⦿ Should be approached from least dangerous side
- ⦿ Do not use open fire for lightening while surveying
- ⦿ Do not walk or stay near badly damaged building of collapse prone building.

Basic principles of SAR..Precautionary measures..



- ⦿ Do not allow many people to gather at one spot / floor.
- ⦿ Move carefully over building ruins
- ⦿ While removing rubble from ruins Do not permit abrupt jerks, shaking or strong blows at the site.

Basic principles of SAR..Precautionary measures..



- ◎ Look for smoking or burning objects while entering the room
- ◎ Be care full for Gas ejection if burning and also for LPG.
- ◎ Be care full of electrical cables as it might be connected to inverter power supply.

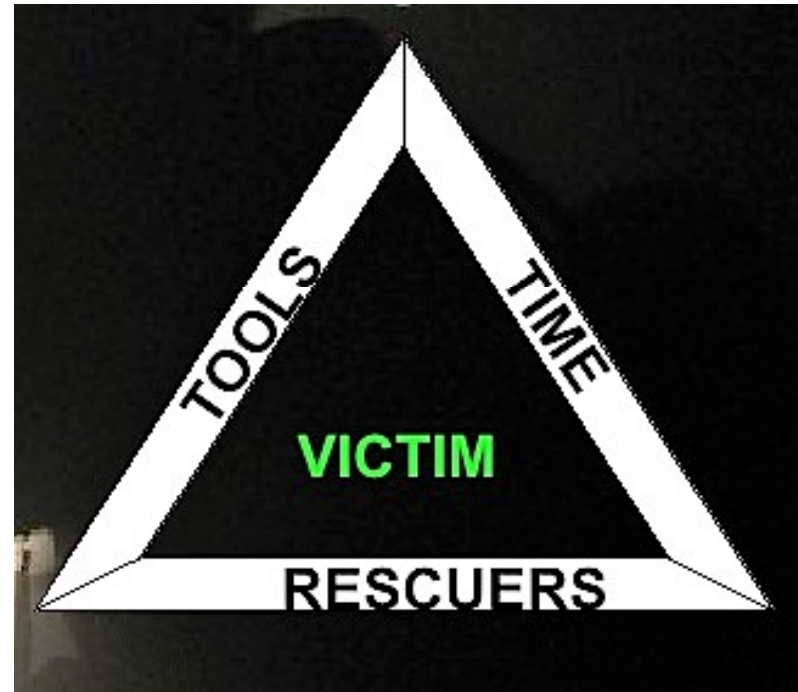
Basic principles of SAR..Precautionary measures..



- ⦿ Formation of team
- ⦿ Make at least two teams with two or more member
- ⦿ Be equipped with complete safety equipment
- ⦿ Proper distribution of responsibility
- ⦿ Distribution of responsibility at affected area
- ⦿ Signal of communication decided before hand

Components of Search and Rescue.

- Rescuers: Trained personals and volunteers.
 - Tools: Depend on their availability and needs of the situation.
 - Time: May be very limited for some victims. First 24 hours known as “Golden time”
- Components of search and rescue operation.



Survival rate of victims under collapsed structure

Duration	Surviving Rate
30 Minutes	91.0% Survive
1 Day	81.0% Survive
2 Days	36.7% Survive
3 Days	33.7% Survive
4 Days	19.0% Survive
5 Days	7.4% Survive

Methods/Techniques..

- ◎ SAR Mapping / Planning
- ◎ Marking methodology
- ◎ Triage
- ◎ Communication
- ◎ Coordination
- ◎ Simple and effective methods
- ◎ Use of Technology
 - Use of thermal sensors/cameras
 - Dog squads
 - Robotics

Methods/Techniques.

Mapping..

- ◎ Mapping/ planning

- Size up – involves assessing the situation and determining safe action plan. It's a continuous analysis of facts that forms the basis for decision making and planning ..

- Gather facts,

- Asses damaged buildings

- Identify your resources

- Establish rescue priorities

- Develop rescue plan

- Conduct the rescue

- Evaluate your progress

- You come to know what will work , what is needed within minutes?

- Hours? An Days?

Methods/Techniques.

Marking methods

◎ Marking Methodology

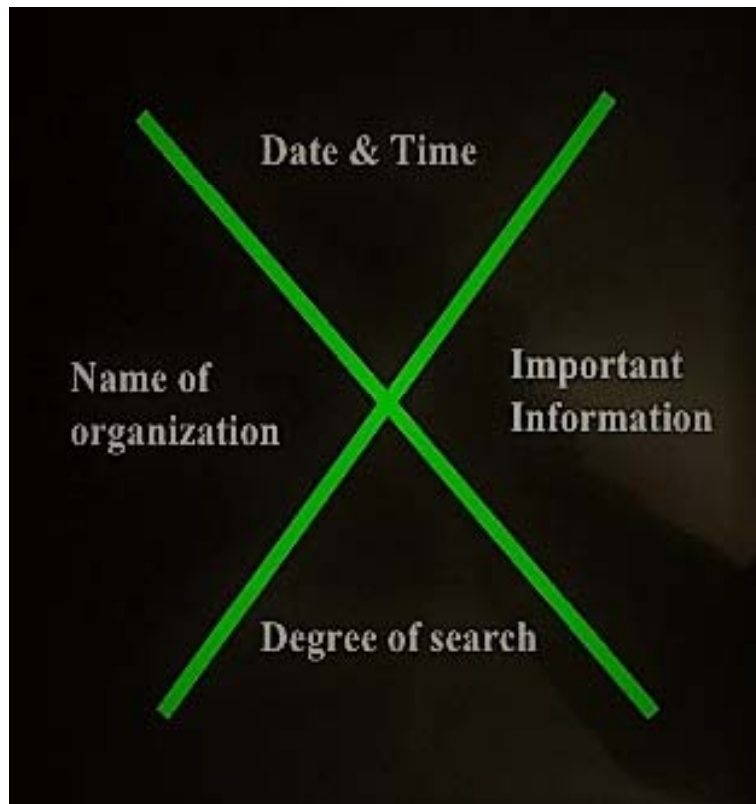
- Mark the building with the 'X' before entering it.
- Mark every primary unit separately
- Once search is completed try to get back to 'X'
- Once the search and rescue operation is over

Write the 'X' on it with following information

- Date and time of the search(on top quadrant)
- Name of responding agency (in left quadrant)
- Degree of search full or partial (bottom quadrant)
- use a 'O' if no victim is found

Methods/Techniques.

Marking Methods



Methods/Techniques..

Triage

- ◎ Start triaging
- ◎ Triage when mass casualties STARTs
- ◎ What is Triage ?



Triage = To sort

- ◎ Sort out victims
- ◎ BUT WHY?
 - Too many victims
Mass casualty trauma situations
 - Too few resources
Disaster responder
Volunteers,
SAR tools
Transport capability
(ambulances)
- ◎ Goal of triage?
 - Best use of scarce resources to accomplish an agreed end point

Methods/Techniques..

Triage

◎ Civilian triage

- Save as many lives as possible
- Reduce morbidity and disability as much as humanly possible
- Most critical are treated first

◎ Military Triage

- Get soldiers back into the battle quickly
- Least injured treated first
 - Not morally acceptable in civilian situations



Advance Methods/Techniques..

Triage

Performed in; Mass casualty trauma situations with available transport

- ⦿ Most 'victims' (biggest number) will have none or minor wounds
 - Need no help or less help later on
 - Actually they can be helpful – play supportive role

- ⦿ Critical victims
 - Search & rescue situations
 - May need first aid

- ⦿ Triage of serious casualties
 - Deciding who might be transported first
 - Most likely will be done by paramedics

Methods/Techniques..

Triage

Simple **T**riage **A**nd **R**apid **T**ransport

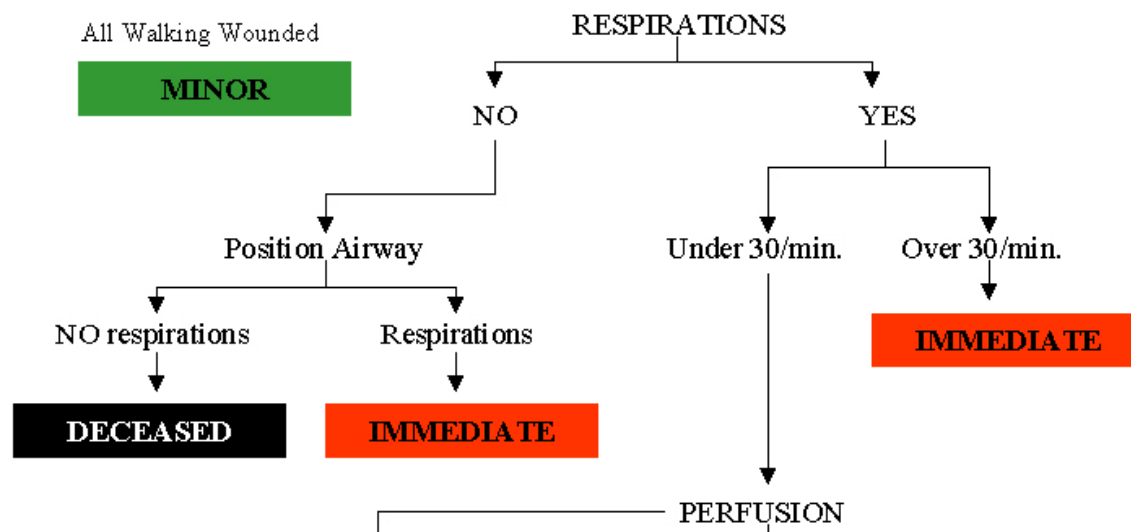
RPM – **R**espiration, **P**erfusion, **M**ental status

- ◎ All who can, should WALK away from the scene
- ◎ For those still on the ground
 - Open airway
 - Respirations over or under 30/min?
 - Radial Pulse Present? Cap refill less than 2 secs?
 - Follows simple commands? Unconscious?
- ◎ *Don't start CPR if you can't transport to hospital*

Methods/Techniques..

Triage

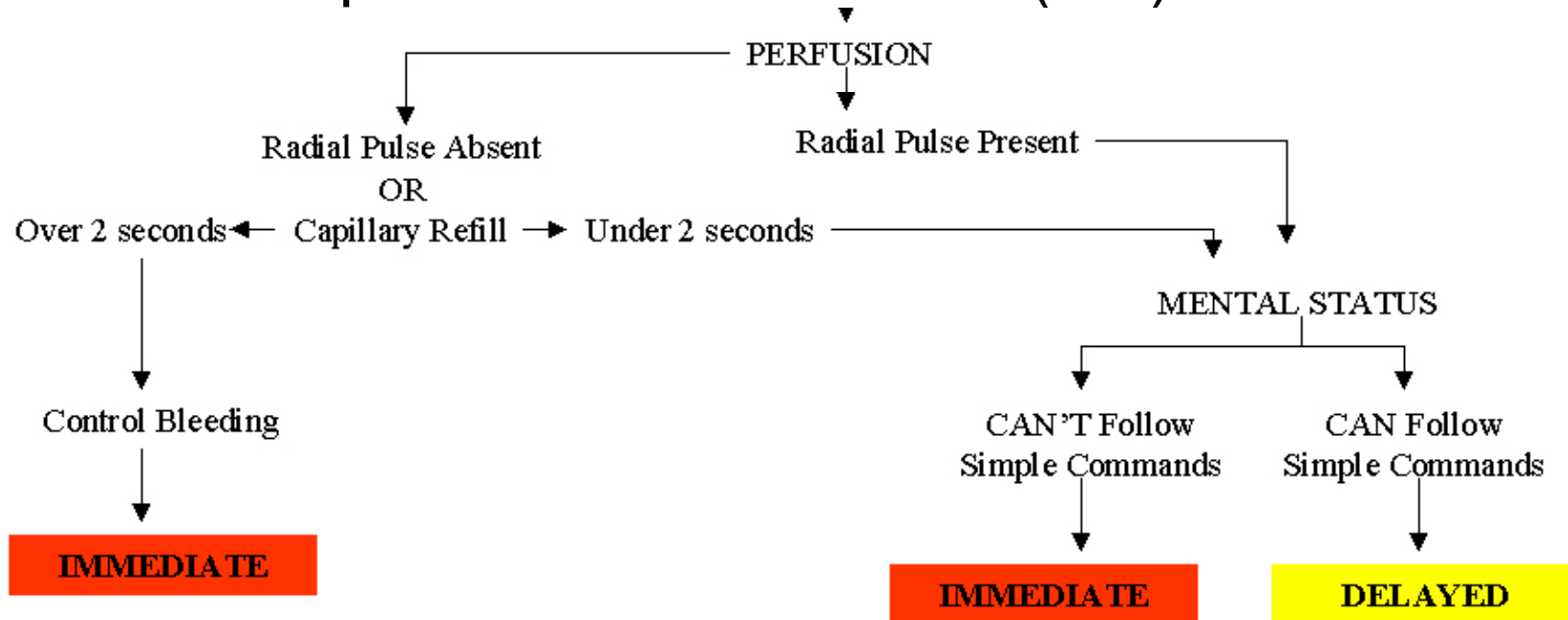
- ⦿ For those still on ground:
- ⦿ Check respirations (before adjusting airway)
- ⦿ Over 30/min = Immediate (red)
- ⦿ Open/adjust airway
 - No respirations = Dead



Methods/Techniques..

Triage

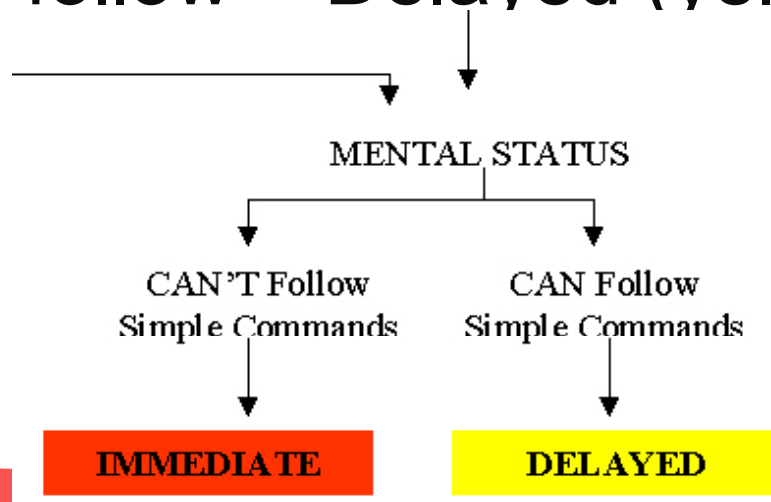
- ⊙ Respirations under 30/min = check perfusion
 - RADIAL Pulse & capillary refill
 - Absent perfusion = Immediate (red)



Advance Methods/Techniques..

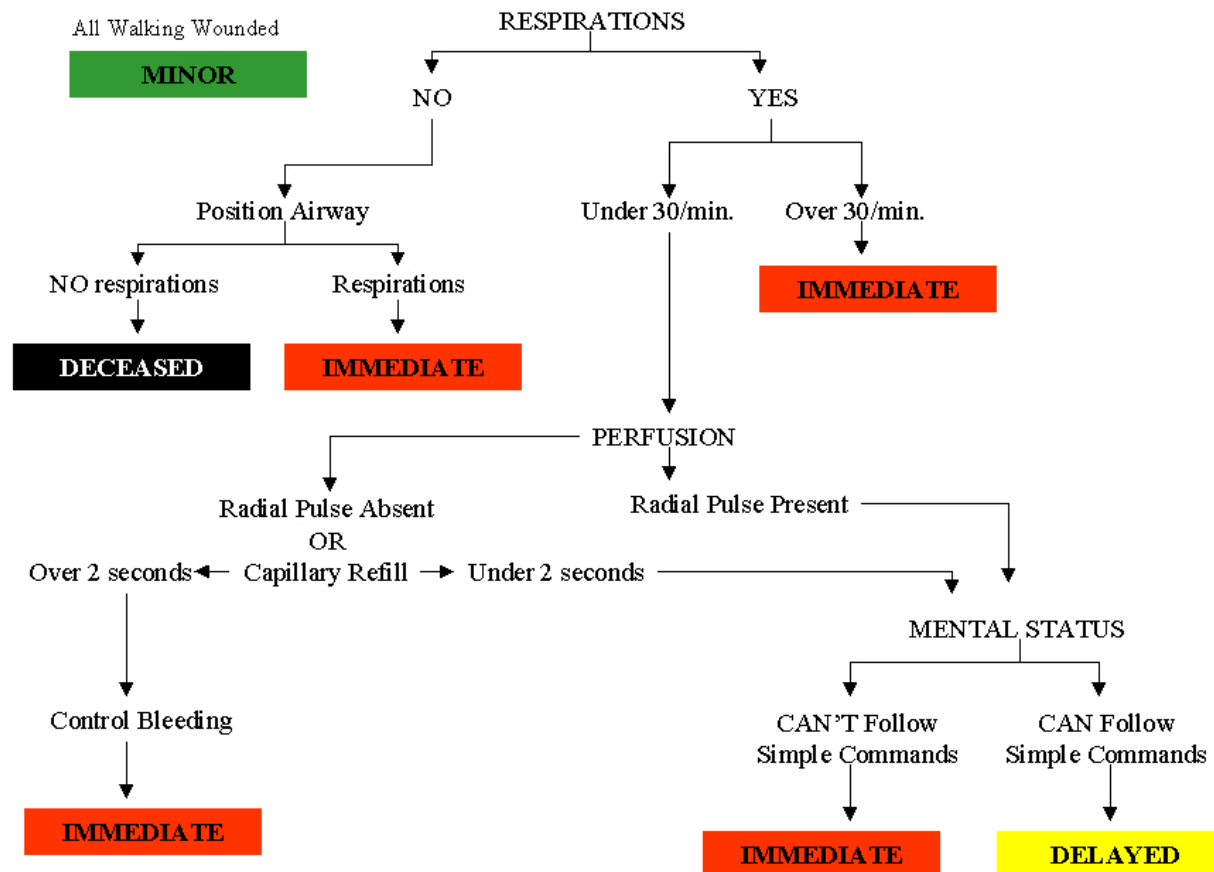
Triage

- ◎ If perfusion is good =
 - Pulse or capillary refill
- ◎ Can patient follow commands?
 - Mental status
- ◎ Cant follow = Immediate (red)
- ◎ Can follow = Delayed (yellow)



Methods/Techniques..

Triage



Methods/Techniques..

Triage

Move the Walking Wounded



MINOR

No Respirations After Head Tilt



MORGUE

Respirations - Over 30



IMMEDIATE

Perfusion - Capillary Refill
Over 2 Seconds



IMMEDIATE

Mental Status - Unable to
Follow Simple Commands



IMMEDIATE

Otherwise



DELAYED

Methods/Techniques..

- Communication
- What are the communication measures available

Corded telephone, Mobile, Satellite phones
Radio, Ham radios

What will work ?

Need to explore more ...

Advance Techniques/methods

◎ Coordination

- Available resources
- Transportation
- Hospitals
- Paramedical
- Other shelter facilities

◎ It's constant in terms of minutes, hours, days



Methods/Techniques

- Simple effective Community response
- Golden time
 - Simple but effective techniques if people are trained



Methods/Techniques..

- ◎ SAR with commonly available tools with help of volunteers within the community and responders.
 - Ladder
 - Shovels
 - Axes
 - Car jack
 - Chain pulley
 - Ropes
 - Hammers
 - Carpentry tools
 - Crow bars
 - Gloves
 - steel tubes
 - Blankets / nets

Advance methods ..

- Thermal sensors & Cameras
 - Operational range # 5 meters
 - Set up time # 2 min
- Power tools - Power machines



Robotics

- Operational range # 30 meters
- Set up time # 2 min
- Don't get tiered / Save rescuers time and life



Dog squad

- Injured by sharp metals
- Limitation to smell due to rain
- Lack of circulating air







Continuum of care..



Continuum of care

- What are the requirements
 - Food, water, medicine, Psychological support
 - Who can provide this
- How to improve capacity of people so they are able to support and save them selves and families if they are trapped ?
- Role of DMH/ PSP.

Thank you !

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