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Disaster Management



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History & Definitions

- ❁ **Triage** : Trier / To Sort.
- ❁ **Disaster**: an incident , either natural or human-made, that produces patients / casualties needing services that exceeds beyond the immediately available resources.



Triage Categories

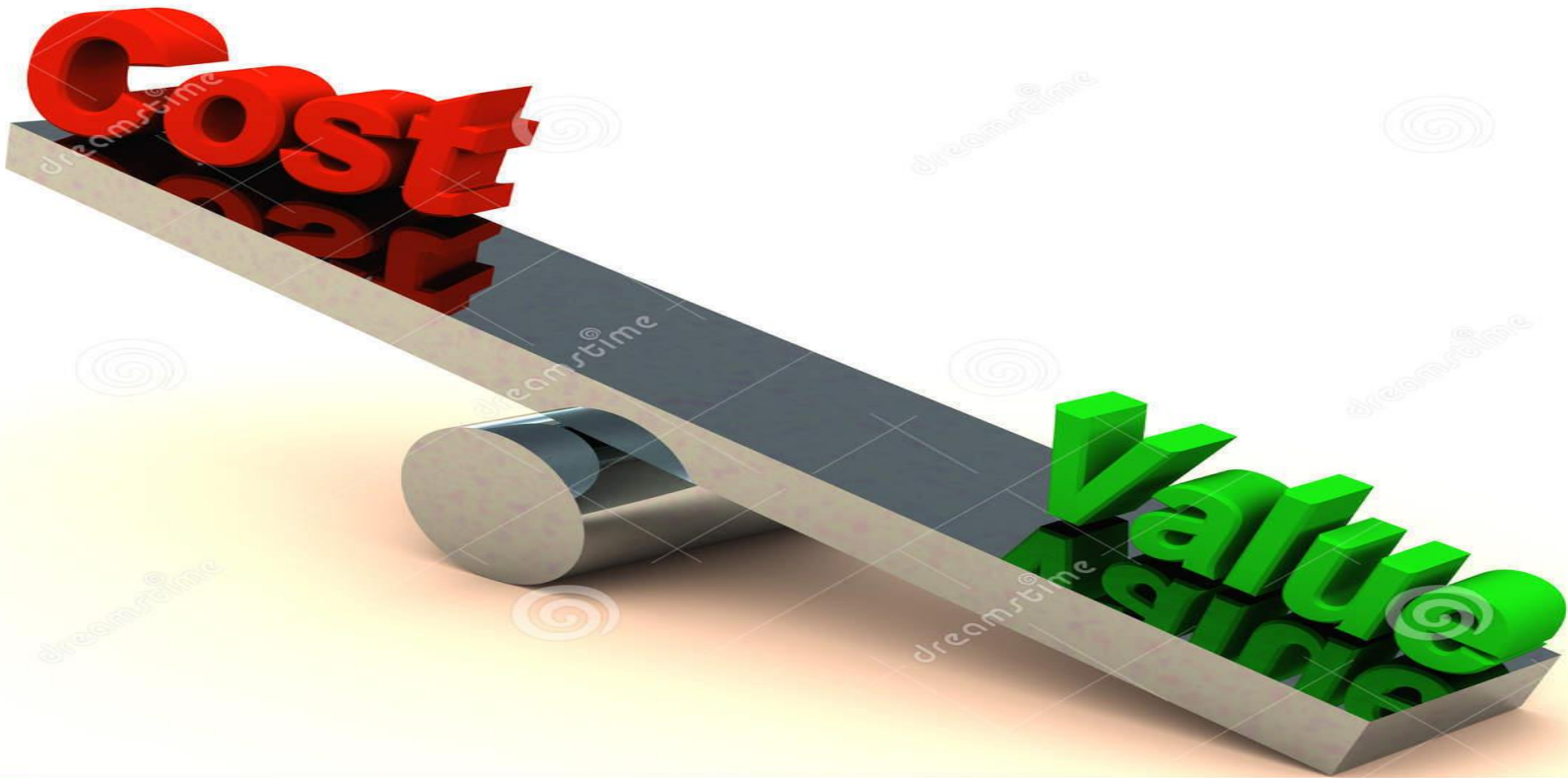
- ⦿ **Non Disaster:** provision of the best of health care services for all patients (e.g. C.T.A.S /E.S.I)
- ⦿ **Disaster / MCI:** provision of the most cost effective / efficient health care services for the greatest number of patients.

S.T,A.R.T & S.A.V.E / S.A.L.T Triage Systems

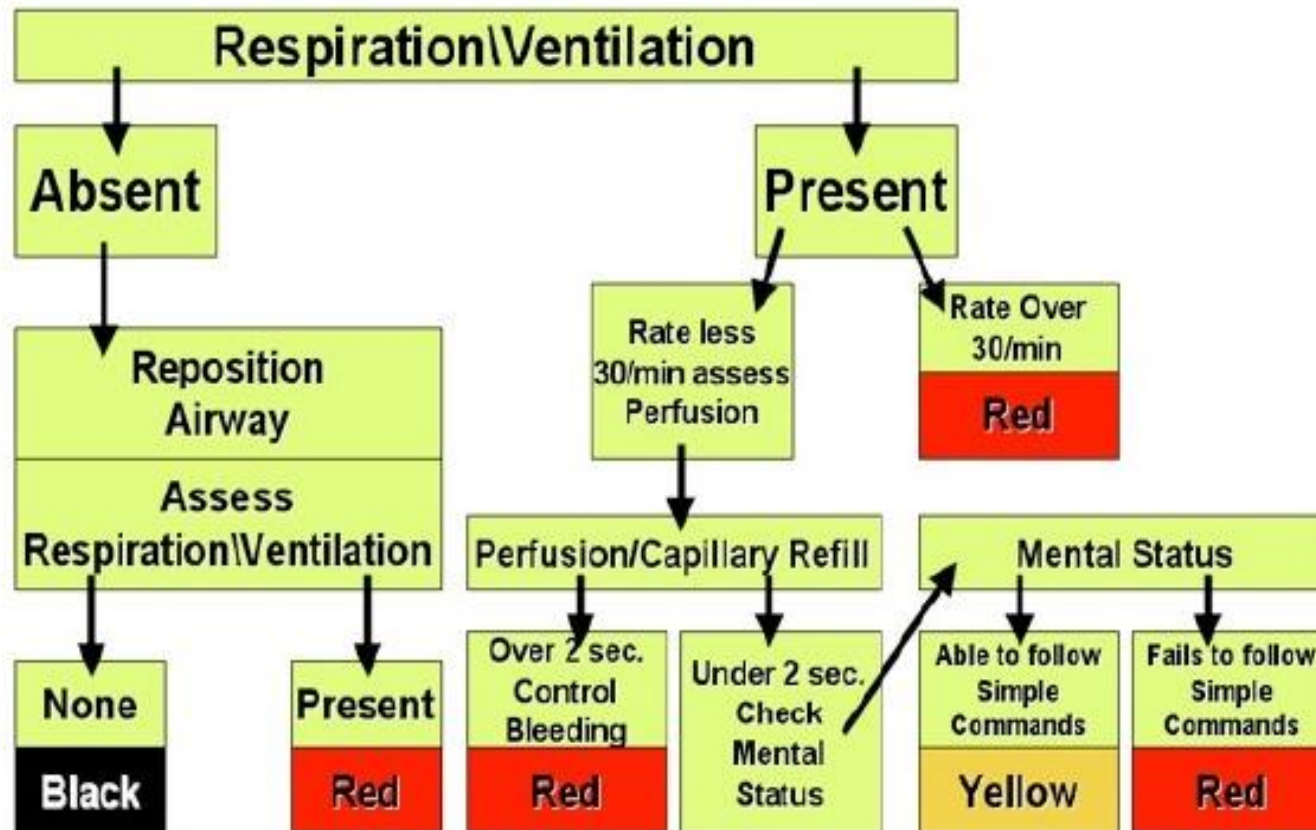
- ⦿ S : Sort
- ⦿ A : Assessment
- ⦿ L : Life saving interventions (e.g chest tube, cric, ETI).
- ⦿ T : Treatment & Transfer

Value

⚙ Value = (Benefit / Resources Required) * Probability of Survival



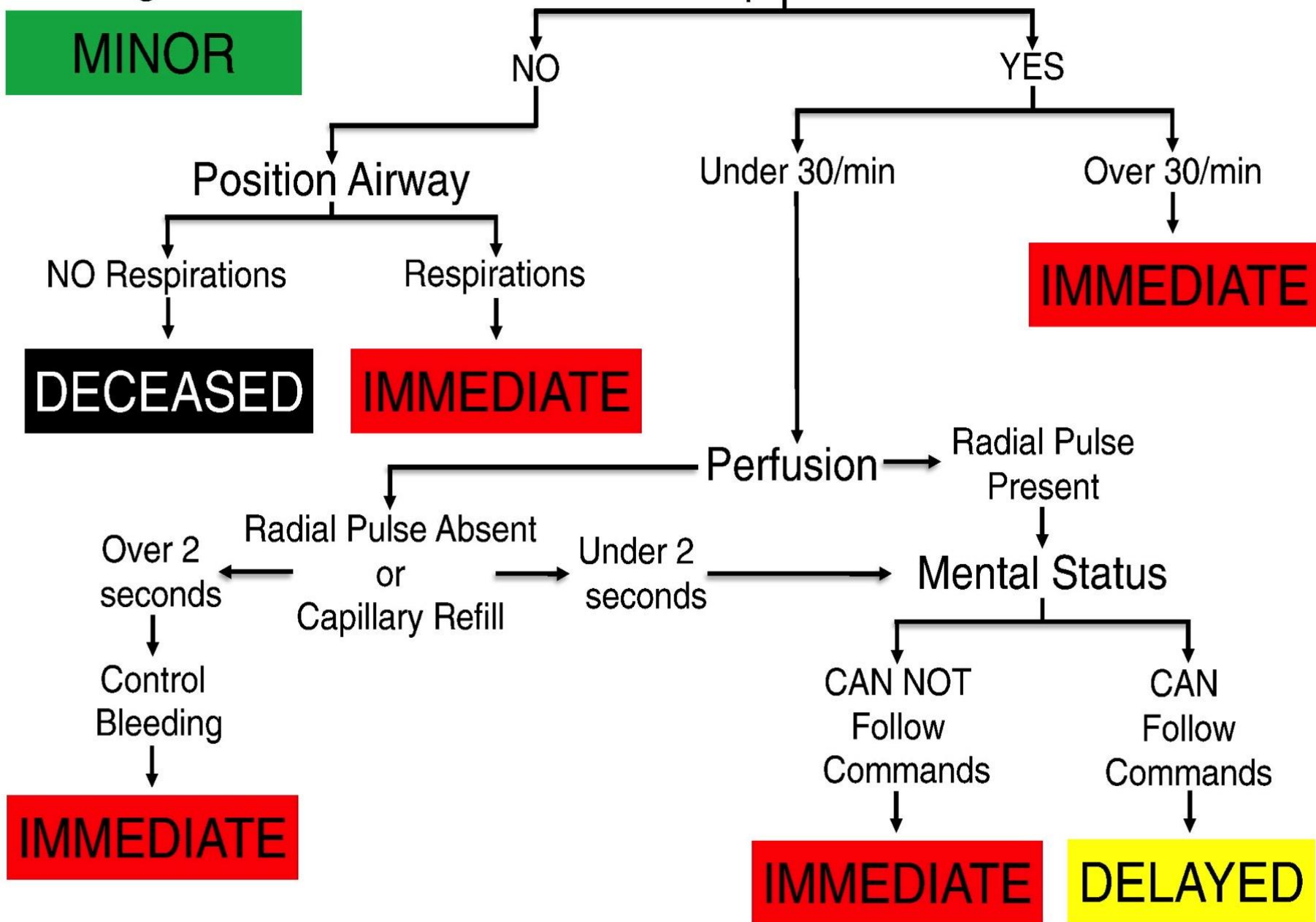
Prehospital triage: START



(Momeni, 2007, slide 16)

All Walking Wounded

MINOR



Circle START Criteria
Used To Select Patient
Triage Category

START TRIAGE

All Wounds (Round) **MINOR**
Respirations 30
Perfusion 2
Mental Status Can Do

RESPIRATIONS

YES NO
One 30/min Under 30/min Perfusion Arteries
IMMEDIATE **IMMEDIATE** **DECEASED**

PERFUSION

Radial Pulse Present Radial Pulse Absent
Capillary Refill Under 2 Seconds Over 2 Seconds
Can Follow Simple Commands Can Follow Simple Commands
IMMEDIATE **IMMEDIATE** **DECEASED**

MENTAL STATUS

Can Follow Simple Commands Can Follow Simple Commands
IMMEDIATE **IMMEDIATE** **DECEASED**

☐ OTHER FAMILY MEMBERS Are Involved in Incident

Name / Relation:

Name

M F Age

Address

Medical History

Meds

Allergies

Medical Crew

DISASTER
RESPONSE
TRIAGE TAG

A123456

Salivation **NERVE**
Lacrimation **AGENT**
Urination **INDICATORS**
Defecation
Gastrointestinal Distress
Crisis

Check Here Only If
Decon Was Needed
& Performed

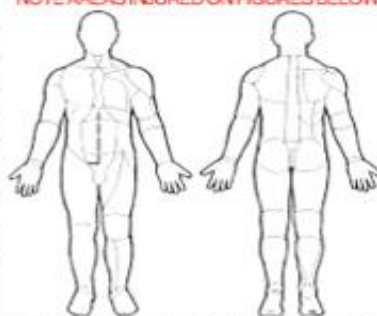
Personal Belongings Tag
Tracking Tag, Etc.

CHECK TYPES
OF INJURIES

SPINAL
BLUNT TRAUMA
BURN
FRACTURE
LACERATION
PENETRATING INJURY
HEAD INJURY

MEDICAL PROBLEM:

NOTE AREAS INJURED ON FIGURES BELOW



TIME	PULSE	RESP	B/P	AVPU

LUNG
SOUNDS:

ECG / SpO2 /
OTHER:

TIME	TREATMENT/MED/DOSE/BY	TIME	TREATMENT/MED/DOSE/BY

NO. OF MARK 1 KITS
ADMINISTERED:

SRP1

SRP2

SRP3

NO. OF DIAZEPAMS
ADMINISTERED:

PRIORITY
0



DECEASED/EXPECTANT

PRIORITY
0

PRIORITY
1



IMMEDIATE

PRIORITY
1

PRIORITY
2



DELAYED

PRIORITY
2

PRIORITY
3



MINOR

PRIORITY
3

PRIORITY
4



INVOLVED

BUT NO APPARENT INJURIES

PRIORITY
4

PRIORITY
0

DECEASED/EXPECTANT

PRIORITY
0

PRIORITY
1

IMMEDIATE

PRIORITY
1

PRIORITY
2

DELAYED

PRIORITY
2

PRIORITY
3

MINOR

PRIORITY
3

PRIORITY
4

INVOLVED

BUT NO APPARENT INJURIES

PRIORITY
4

TRANSPORTATION
INFORMATION
ON OTHER SIDE

ADOL TRANSPORT
INFO / COMMENTS:

SEX
M / F

AGE


NAME

HOSP


TRANS
TIME

OTHER FAMILY
INVOLVED


FRONT







A1234567



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II






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III






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II



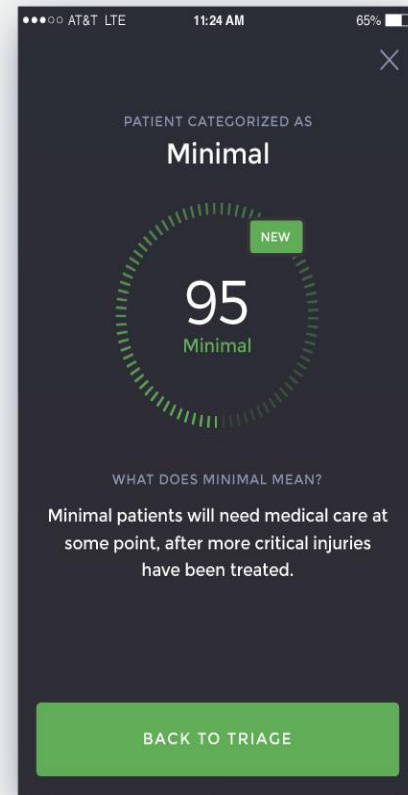
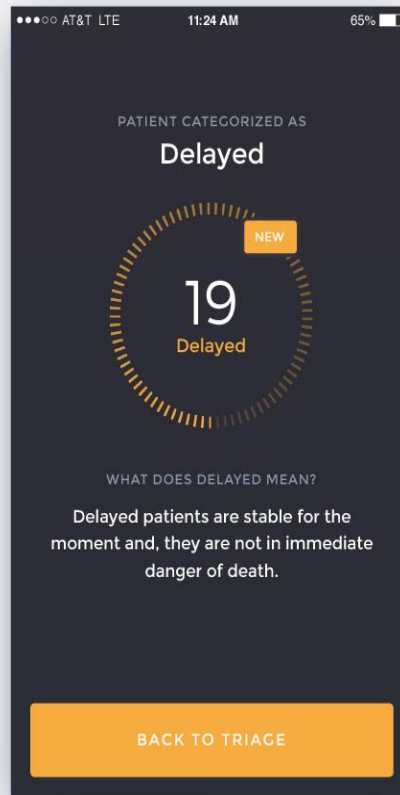
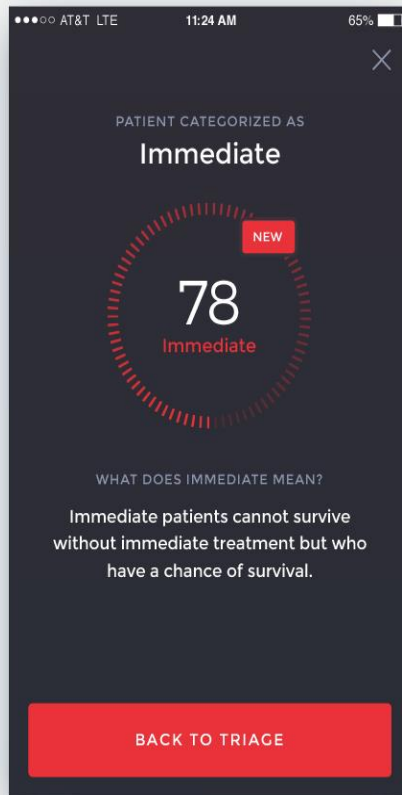
II

III



III

Triage Apps



Disaster Management



Recent Disaster Events

- ⦿ Hurricane Harvey & Irma.
- ⦿ Hepatitis “A” outbreak
- ⦿ Las Vegas Shooting.



MANDALAY BAY

**ROUTE 91
HARVEST SITE**



Hurricanes



abc NEWS

HURRICANE IRMA

FORECAST TRACK



Unified Command System in Disaster Management



Goals & Objectives

- ⦿ The needs for a well established unified command system in disaster management.
- ⦿ Incident Command System (ICS) functionality.
- ⦿ National Incident Management System (NIMS) functionality.
- ⦿ Training, education, credentialing & certification in disaster management.

Incident Management Shortcomings

- ⦿ Lack of accountability.
- ⦿ Unclear chains of command and supervision.
- ⦿ Communication: codes and terminology.
- ⦿ Lack of an orderly and systematic planning process.
- ⦿ Lack of a predefined integrated inter-agency process.

Unified Command System in Disaster Management

- ⦿ A systemic approach through mechanism to achieve a set of goals and objectives in situations where two or more political or functional entities have authorities and /or assets.



Unified Command

- ❶ **Joint Operations Center (JOC)** : operates 24/7/365, with multiple agencies.
- ❷ **Joint Information Center (JIC)** : interface location between the media and the PIO.



Federal Emergency Management Agency (FEMA)

- ⦿ Established in 1979
- ⦿ Mitigate, prepare, respond & recover from all types of disaster events



The Incident Command System - (ICS)

- ❁ **(ICS):** is a standardized approach to the command, control, and coordination of emergency response providing a common hierarchy within which responders from multiple agencies can be effective.

ICS

- ❁ ICS includes procedures to select and form temporary management hierarchies to control funds, personnel, facilities, equipment, and communications.



Comprehensive Resource Management

- ⦿ Resource management and tracking includes :-
- ⦿ Categorizing resources.
- ⦿ Ordering resources.
- ⦿ Dispatching resources.
- ⦿ Tracking resources.
- ⦿ Recovering resources.

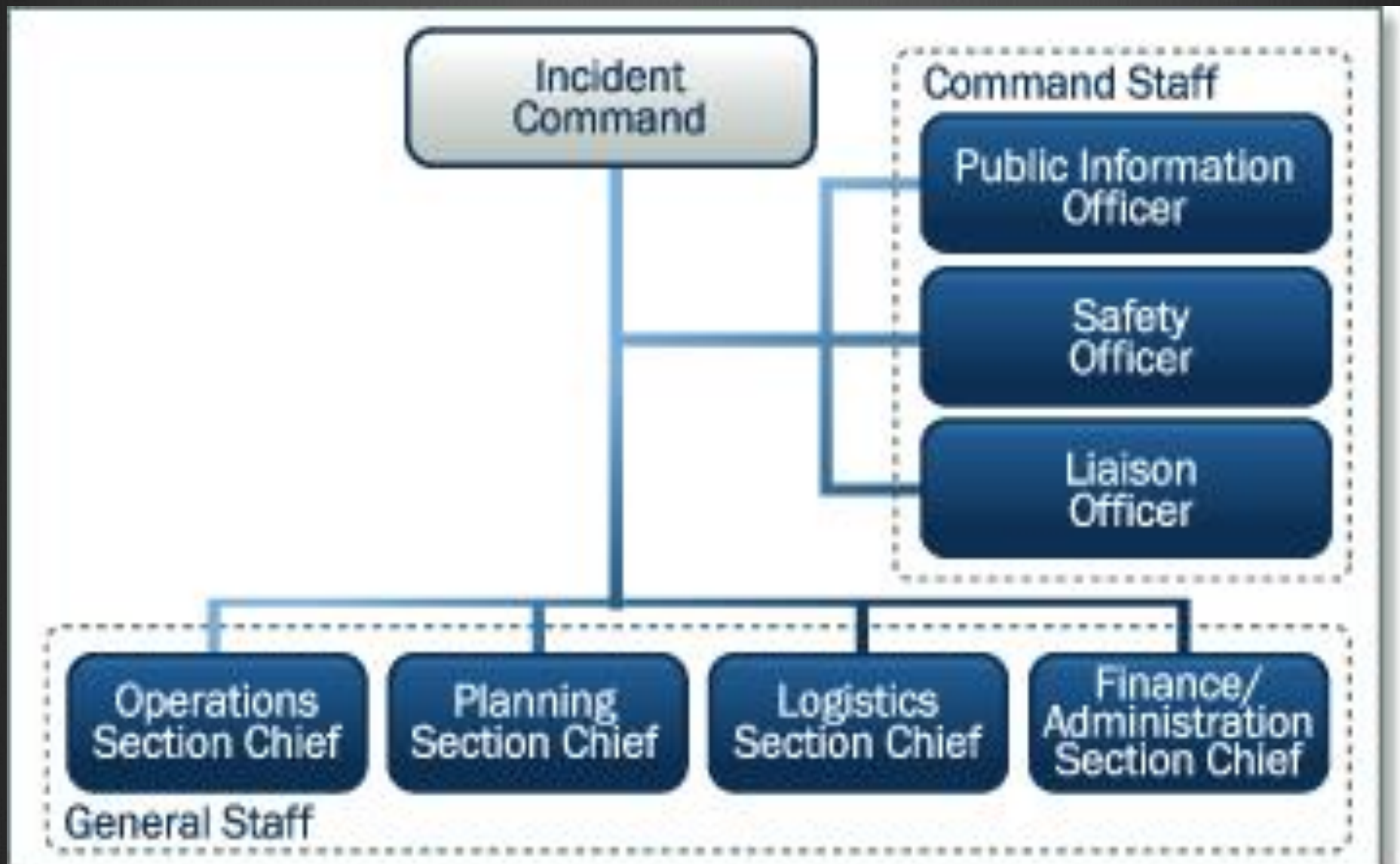


ICS in emergency and non-emergency event management

- ⦿ Concerts
- ⦿ Parades
- ⦿ Ceremonies
- ⦿ Fairs and other gatherings
- ⦿ Training exercises



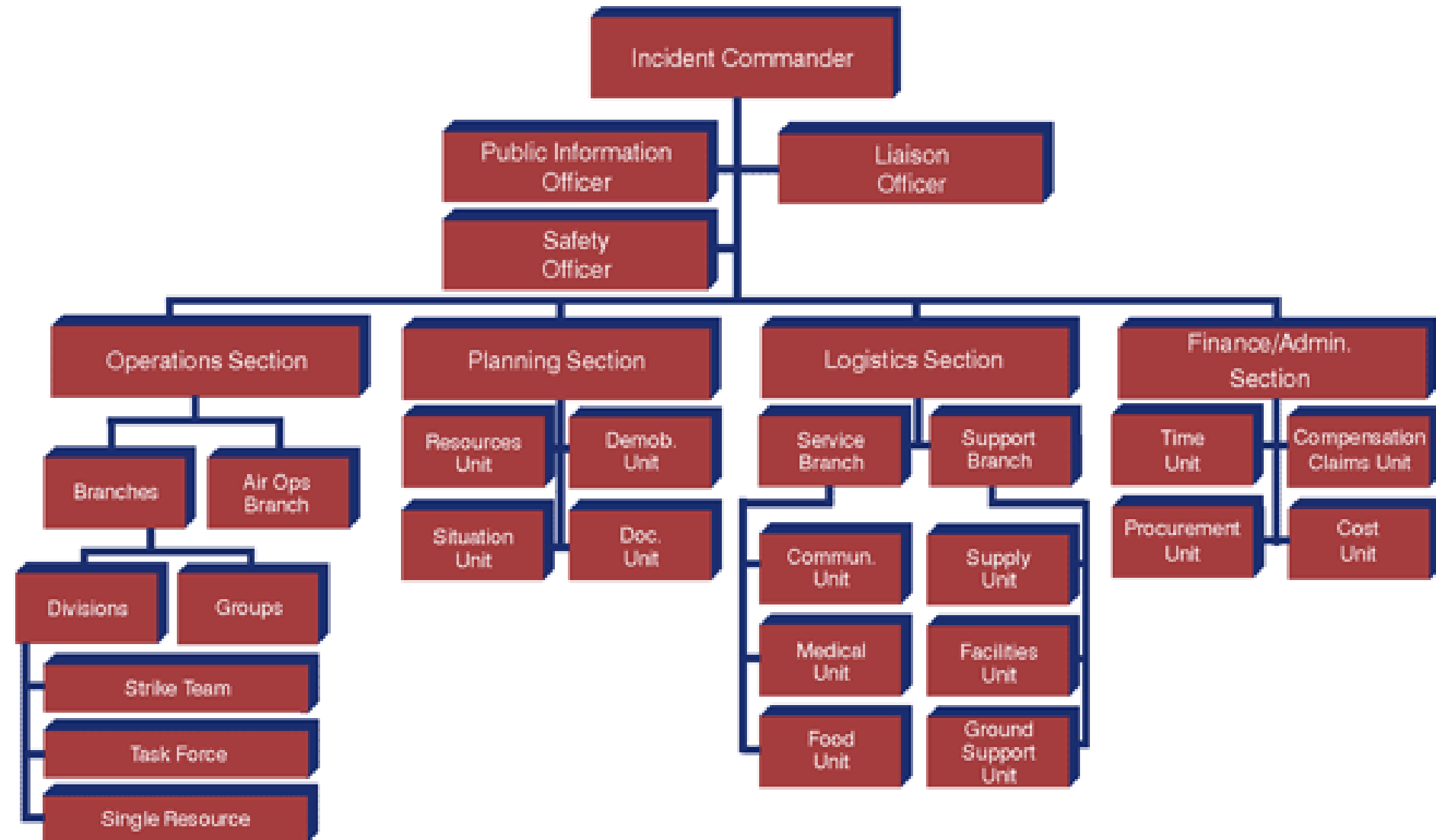
ICS



ICS Framework

- ⦿ Incident Commander
- ⦿ Sections (Chief)
- ⦿ Branch (Director)
- ⦿ Division (Supervisor)
- ⦿ Group (Supervisor)
- ⦿ Unit, Team, Force (leader)
- ⦿ Individual Resources

ICS Flexibility & Scalability



Incident Management



NIMS

ICS/NIMS Training Pyramid

ICS 400
ICS 300
ICS 200
ICS 100

IS 800
IS 700

Area Command Functions
Multiagency Coordination
Leadership

Command and General Staff
EOC Managers

ICS 400

Tactical Level Management

ICS 300

IS 800

Division/Group Supervisors
Branch Directors
Strike Team/Task Force Leaders
EOC Staff

Crew Supervision
Initial Management

ICS 200

Unit Leaders
Single Resource Leaders

Basic Awareness

ICS 100

IS 700

Responders

Training, Education, Certification & Credentialing

- ⊗ International fellowship programs in disaster medical Sciences. (e.g CDMS).
- ⊗ International accredited courses in disaster medicine.
- ⊗ E.M.D.M : European Master in Disaster Medicine.
- ⊗ European Medical Corp (recent).

Questions!

In Summary

- ⦿ International Standardization in training, education, credentialing & certification
- ⦿ Six sigma & lean management application.