



# Disaster and Multi-Casualty Triage



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*Photo by Michael Rieger*

*Volunteer disaster victims, courtesy of Americorps, are assisted by emergency crews during a training exercise at the old Mile High Stadium in February.*



# Triage

- [French, from trier, *to sort*, from Old French.]
- *A method of quickly identifying victims who have immediately life-threatening injuries AND who have the best chance of surviving.*

# Tagging

- Complements Triage
- Rapid Identification of patient
- Color Coded / Bar Coded system
- Plastic “bands” can substitute tags

No. 239352 **TRIAGE TAG** No. 239352  
 PART  I  
 No. 239352  
 CALIFORNIA FIRE CHIEFS ASSOCIATION®  
 Leave the correct Triage Category ON the end of the Triage Tag

Move the Walking Wounded	<b>MINOR</b>
No respirations after head tilt	<b>DECEASED</b>
<input type="checkbox"/> Respirations - Over 30	<b>IMMEDIATE</b>
<input type="checkbox"/> Perfusion - Capillary refill Over 2 seconds	<b>IMMEDIATE</b>
<input type="checkbox"/> Mental Status - Unable to follow simple commands	<b>IMMEDIATE</b>
Otherwise-	<b>DELAYED</b>

MAJOR INJURIES: \_\_\_\_\_  
 HOSPITAL DESTINATION: \_\_\_\_\_

ORIENTED   DISORIENTED  UNCONSCIOUS

TIME	PULSE	B/P	RESPIRATION

**DECEASED**

**IMMEDIATE** No. 239352

**DELAYED** No. 239352

**MINOR** No. 239352

**TRIAGE TAG**  
 PART  II

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ALLERGIES: \_\_\_\_\_  
 PATIENT R<sub>x</sub>: \_\_\_\_\_

TIME	DRUG SOLUTION			DOSE
	D <sub>3</sub> W	R/L	NS	

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PERSONAL INFORMATION

NAME: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_ TEL. NO.: \_\_\_\_\_

MALE  FEMALE  AGE: \_\_\_\_\_ WEIGHT: \_\_\_\_\_

**DECEASED**

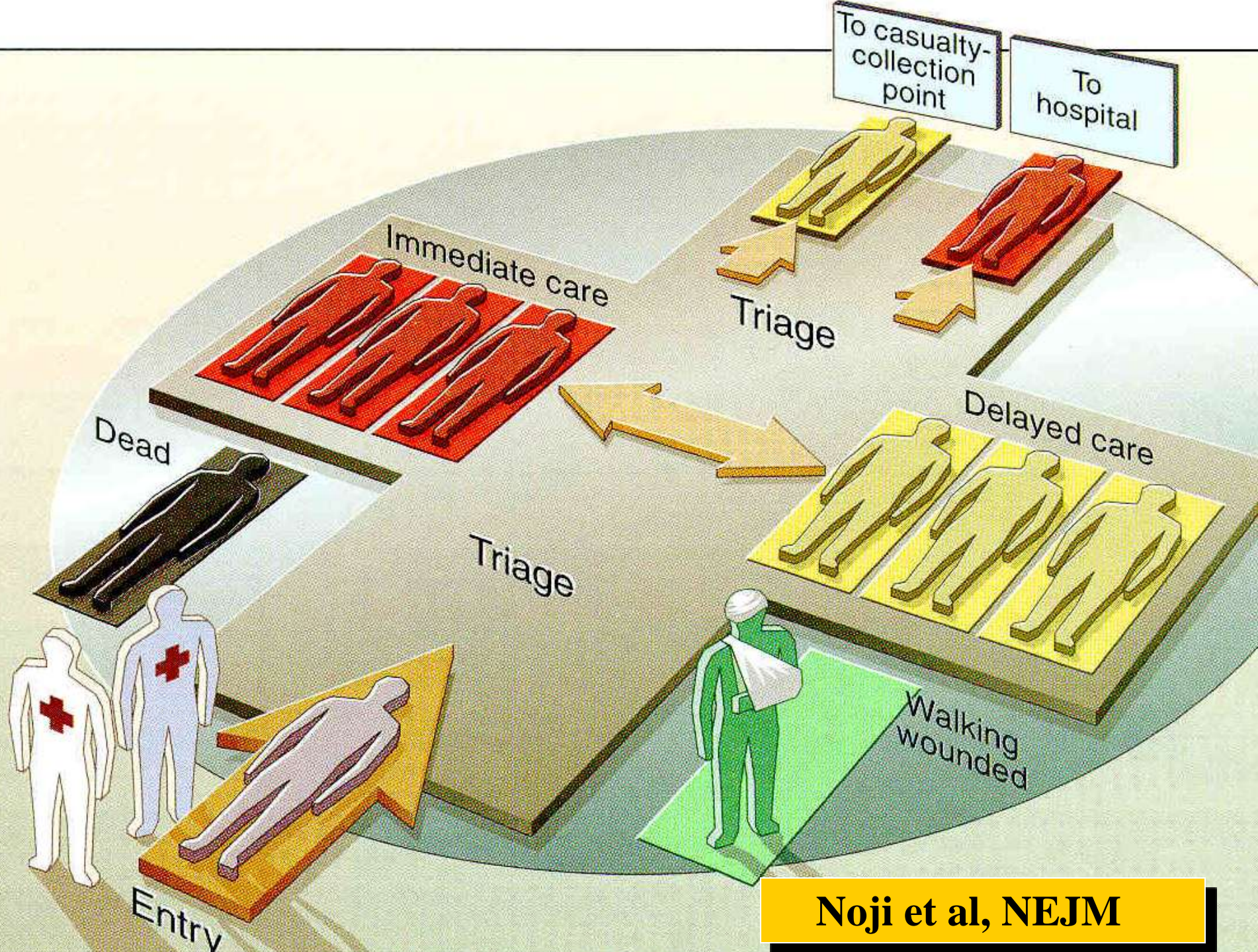
**IMMEDIATE**

**DELAYED**

**MINOR**

- 
- 
- 

Colour	Priority	Description
Red	1	May survive if given immediate simple life saving measures
Yellow	2	Should survive if given care within a few hours
Green	3	Walking wounded: minor injuries that do not require rapid care
Black	4	Deceased or severely injured patients unlikely to survive



Noji et al, NEJM

# START SYSTEM

- **Created in the 1980's by Hoag Hospital and the Newport Beach CA Fire Dept**
- **Allows rapid assessment of victims**
- **It should not take more than 15 sec/ Pt**
- **Once victim is in treatment area more detailed assessment should be made**





# START SYSTEM

**Clasification is based on three items**

- **Respiratory**
- **Perfusion**
- **Mental status evaluation**



All Walking Wounded

# RESPIRATIONS

NO

YES

**MINOR**

Position Airway

NO respirations

Respirations

**DECEASED**

**IMMEDIATE**

Under 30/min.

Over 30/min.

**IMMEDIATE**

PERFUSION

Radial Pulse Absent

OR

Capillary Refill

Over 2 seconds ←      → Under 2 seconds

Control Bleeding

**IMMEDIATE**

Radial Pulse Present

MENTAL STATUS

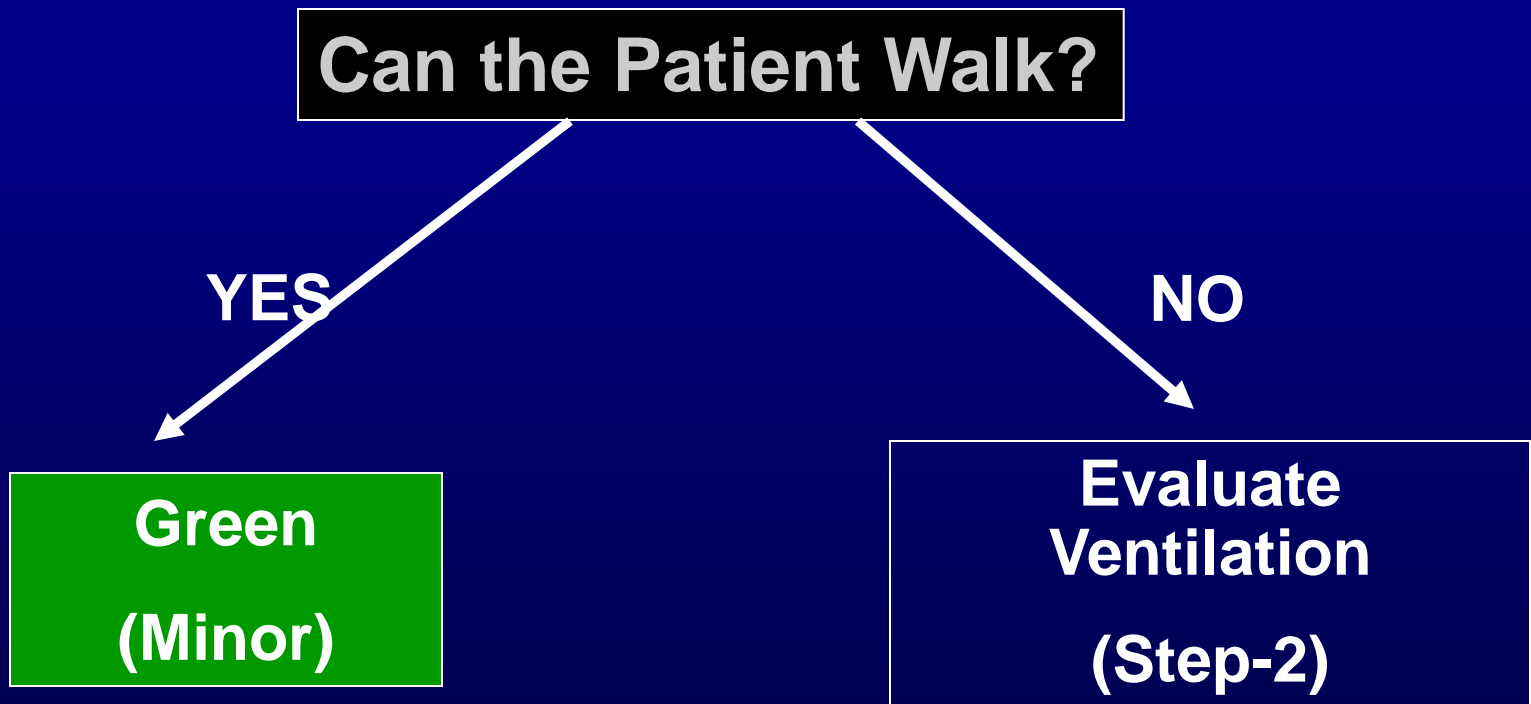
CAN'T Follow  
Simple Commands

CAN Follow  
Simple Commands

**IMMEDIATE**

**DELAYED**

# START First Step



# START Step-2

Ventilation Present?

NO

YES

Open Airway

Ventilation Present?

> 30/Min

< 30/min

NO

YES

Red/ Immediate

Black

Red/ Immediate

Evaluate Circulation  
(Step-3)

# START Step-3

**Circulation**

**Absent Radial Pulse**

**Control Hemorrhage**

**Red/ Immediate**

**Present Radial Pulse**

**Evaluate Level of  
Consciousness**

# START Step-4

**Level of Consciousness**

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graph TD; A[Level of Consciousness] --> B[Can't Follow Simple Commands]; A --> C[Can Follow Simple Commands]; B --> D[Red/ Immediate]; C --> E[Yellow/ Delayed];
```

**Can't Follow Simple  
Commands**

**Red/ Immediate**

**Can Follow Simple  
Commands**

**Yellow/ Delayed**

# Contaminated Patients

- Patients with exposure (potential or real) to contaminants should be tagged as **BLUE**
- This category will continue to stay until patient is adequately decontaminated then follow **START** as usual
- Some recommend a “double tagging” with blue and the standard **START** color

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# START-Overview

- Remember RPM
- R- Respirations- 30
- P- Perfusion- Radial Pulse
- M- Mental- Follows Commands



START System and the Evidence



# Comparative Analysis of Multiple-Casualty Incident Triage Algorithms

NOVEMBER 2001

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**Study objective:** We sought to retrospectively measure the accuracy of multiple-casualty incident (MCI) triage algorithms and their component physiologic variables in predicting adult patients with critical injury.

<b>Triage Algorithm</b>	<b>Sensitivity, % (95% CI)</b>	<b>Specificity, % (95% CI)</b>	<b>Odds Ratio (95% CI)</b>
Simple Triage and Rapid Treatment (capillary refill)	85 (78–90)	86 (84–88)	35 (21–61)
Modified Simple Triage and Rapid Treatment (palpable radial pulse)	84 (76–89)	91 (89–93)	52 (31–90)
Triage Sieve (capillary refill)	45 (37–54)	89 (87–91)	7 (4–10)
Triage Sieve (heart rate)	45 (37–54)	88 (86–90)	6 (4–10)
CareFlight Triage	82 (75–88)	96 (94–97)	99 (56–176)



# Reverse Triage

- **Used in mass-casualty lightning injuries**
- **The dead are treated first**
- **High potential for respiratory arrest**
- **Potential for resuscitative success**

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# Conclusions

- **Triage is a method of quickly identifying victims who have immediately life-threatening injuries AND who have the best chance of surviving**
- **Key elements of the START Triage System are: Respiration, Perfusion and Mentation**
- **Reverse Triage is used for mass casualty lightning incidents.**