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Pediatric Disaster Triage Training Scenarios: Utilizing the JumpSTART© Method

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Acknowledgements

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How to Use This Document

This document is offered as a resource to organizations as they conduct drills and exercises that involve mass casualty incident (MCI) triage and the use of START and JumpSTART Triage methods. Inclusion of infants and children in disaster drills and exercises is an essential component in preparedness efforts, and can assist in preparing an organization to treat critically ill or injured pediatric patients during an actual disaster or mass casualty incident (MCI).

Please note that any recommendations in this document are based on current information and guidelines found within the medical literature at the time of publication.

NOTE: This document defines the pediatric age range as 15 years of age and younger in accordance with the Emergency Medical Services and Trauma Center Code adopted by the Illinois Department of Public Health. Exceptions may include the population of children with special healthcare needs/ children with functional access needs.

START: Simple Triage and Rapid Treatment

Disaster triage is a method of quickly identifying victims who have life-threatening injuries and who also have the best chance of survival. Identification of such victims serves to direct other rescuers and health care providers to these patients first when they arrive on the scene.

One of the most widely recognized mass casualty incident (MCI) triage systems in the United States is the **START** Triage System (Simple Triage and Rapid Treatment). This system uses the assessment of respiration, perfusion and mental status (RPM) to make a primary triage decision in less than 30 seconds. The **START** Triage System is one method of triage which can be used in a MCI, and it was developed by Hoag Hospital and the Newport Beach Fire Department of Newport Beach, Calif. It was designed to allow first responders to triage or assess multiple victims rapidly, usually taking less than a minute, to determine which category each should be assigned. The assessment and triage is based on three primary observations: **R**espiratory, **P**erfusion, and **M**ental Status (RPM).The four triage categories are: **IMMEDIATE, DELAYED**, **MINOR,** and **EXPECTANT/ DECEASED.**

The **START** Triage System is intended for adults, but may also be used for older children. Determining the appropriate system to use in the pre-adolescent and young teen population can be sometimes challenging, so the current recommendation is: If a victim appears to be a child, use **JumpSTART©**; If a victim appears to be a young adult, use **START**.

The triage steps of the **START Triage System** are as follows:

- Step 1: All victims who are able to walk are directed to an area designated for minor injuries where they will undergo a secondary and more involved triage and assessment. Any non-ambulatory victim reporting to this area, such as a wheelchair bound victim or infants carried to the area, must undergo a thorough evaluation upon arrival to ascertain the correct triage status.

- Step 2:

    a) All remaining non-ambulatory victims are now assessed for the presence of spontaneous breathing (respirations). If spontaneous breathing is absent and not restored through conventional positional techniques to open the airway, the victim is tagged **EXPECTANT/ DECEASED** and the triage officer moves on to the next victim. If breathing is restored with repositioning, the victim is tagged **IMMEDIATE** and the triage officer moves on.

    b) If spontaneous breathing is present, the rate is assessed: a rate above 30/minute receives a **IMMEDIATE** and the triage officer moves on; if the rate is less than 30, the triage officer moves on to step 3.

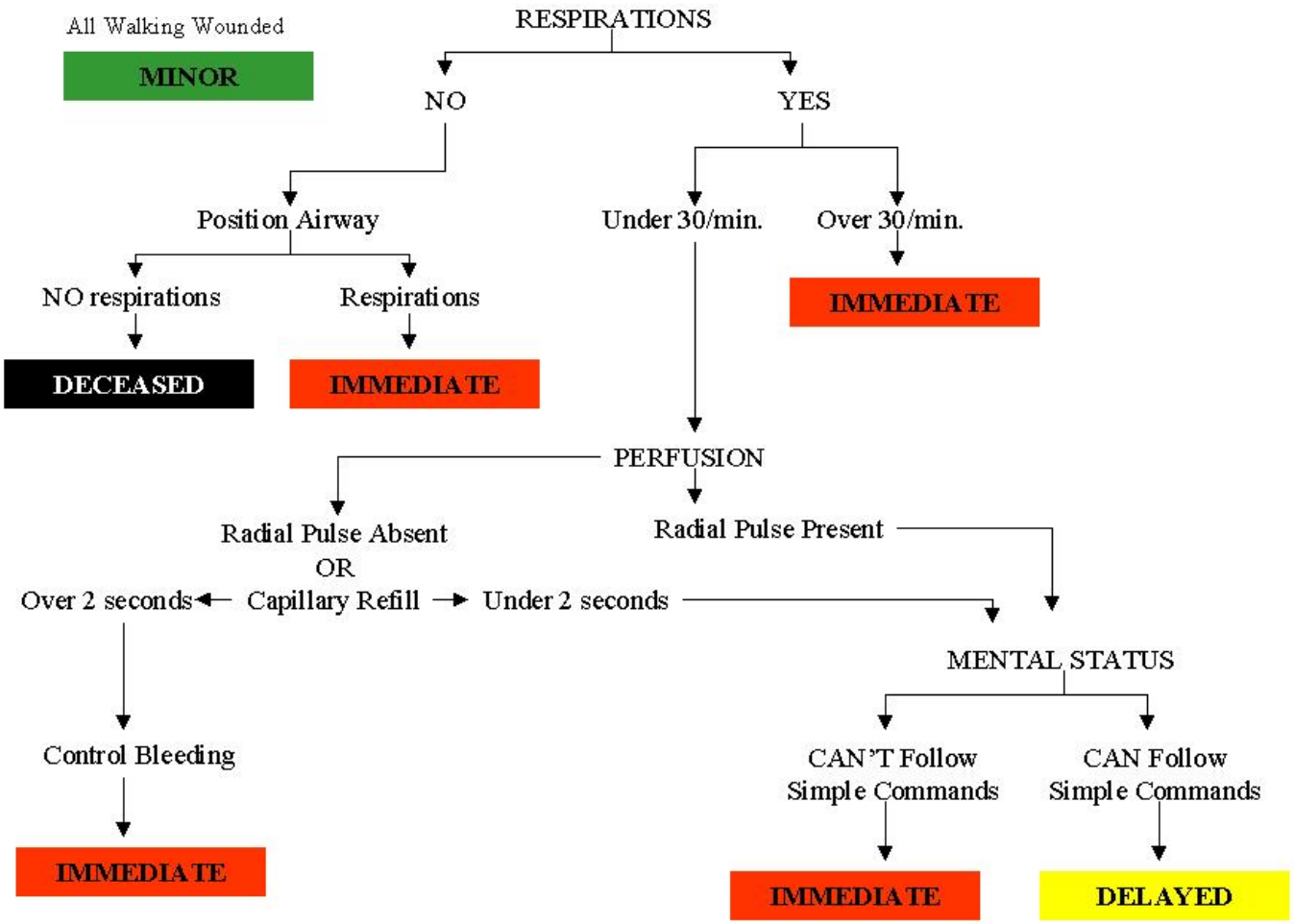
- Step 3: The victim is now assessed for perfusion. This can be done by either capillary refill or radial pulse. If the radial pulse is absent or the capillary refill is >2 seconds the victim is tagged **IMMEDIATE.** If a radial pulse is present or capillary refill is <2 seconds, the triage officer proceeds to the next step.

- Step 4: The triage officer now checks the mental status of the victim. If the victim cannot follow simple commands, is unconscious, or has altered state of consciousness, he/she receives an **IMMEDIATE** tag for immediate treatment. If the victim can follow simple commands, he/she receives a **DELAYED** tag for delayed treatment.

NOTE: For all **IMMEDIATE** victims, the triage officer must also attempt to control bleeding before moving on to the next patient. All victims tagged **EXPECTANT/DECEASED**, unless clearly suffering from injuries incompatible with life, should be reassessed once critical interventions for **IMMEDIATE** and **DELAYED** victims are completed.

For more information please visit www.start-triage.com

START TRIAGE ALGORITHM



Source:
Hoag Hospital & Newport Beach Fire and Marine Dept.

JumpSTART©: Pediatric Mass Casualty Incident (MCI) Triage Tool

When triaging children, a standardized disaster triage system provides guidance for personnel making life and death decisions that otherwise may be influenced by emotional issues.

JumpSTART© Pediatric Mass Casualty Incident (MCI) Triage Tool is an objective triage system that addresses the needs of children and can be a resource tool when planning a triage process for pediatric patients. Although the JumpSTART© system parallels the START system, it takes into consideration the developmental and physiological differences of children by using breathing as the cornerstone for triage decisions. Adding a respiratory component to the triage system may increase triage time by 15-25 seconds, however, since the number of patients requiring a ventilatory trial would most likely be small, it is not thought to significantly affect overall triage time for an incident.

Additionally, since the physiologic indicators specified for START are not generally applicable to the pediatric victim, different criteria are needed to assess young patients. For example, neurological status under START depends on the patient's ability to obey commands. This index is clearly not applicable to young children who lack the developmental ability to respond appropriately to commands.

The **JumpSTART©** Pediatric MCI triage system is designed for triaging infants and young children. Determining the appropriate system to use in the pre-adolescent and young teen population can be sometimes challenging, so the current recommendation is: If a victim appears to be a child, use **JumpSTART**; if a victim appears to be a young adult, use **START**.

JumpSTART© uses the same triage categories as **START**: **IMMEDIATE**, **DELAYED**, **MINOR**, and **EXPECTANT/ DECEASED**.

In children, because of anatomical/physiological reasons such as weak intercostal muscles or mechanical airway obstruction, apnea may occur rapidly. **Thus circulatory failure usually *follows* respiratory failure**. There may be a period of time when the child is apneic but continues to maintain a pulse. It is during this time that airway clearance and a ventilatory trial may stimulate spontaneous breathing. If spontaneous breathing begins, the child is categorized as **IMMEDIATE** for further treatment. If spontaneous breathing does not follow the initial ventilatory trial, the child is categorized as **EXPECTANT/DECEASED** or non-salvageable.

The triage steps of the JumpSTART© Pediatric MCI triage system are as follows:

- Step 1: All children who are able to walk are directed to an area designated for minor injuries where they will undergo a secondary and more involved triage. Infants carried to this area or other non-ambulatory children taken to this area must undergo a complete medical and primary evaluation using modifications for non-ambulatory children to ascertain triage status. (Please refer to the Modifications for Non-Ambulatory Children* section on the following page).

- Step 2:

    a) All remaining non-ambulatory children are assessed for the presence/absence of spontaneous breathing. If spontaneous breathing is present, the rate is assessed and the triage officer moves on to step three.

    b) If spontaneous breathing is not present and is not triggered by conventional positional techniques to open the airway, palpate for a pulse (peripheral preferred). If no pulse is present, patient is tagged **DECEASED/EXPECTANT** and the triage officer moves on.

c) If there is a palpable pulse, the rescuer gives five breaths (approximately 15 sec.) using mouth to mask barrier technique. If the ventilatory trial fails to trigger spontaneous respirations, the patient is tagged **EXPECTANT/DECEASED** and the triage officer moves on. However, if respirations resume, the patient is tagged **IMMEDIATE** and the triage officer moves on **without** providing any further ventilations.

- Step 3: If the respiratory rate is 15-45/minute, proceed to checking perfusion. If the respiratory rate is less than 15 (less than 1/every 4 seconds) or faster than 45/minute or irregular, tag as **IMMEDIATE** and move on.

- Step 4: Assess perfusion by palpating pulses on a (seemingly) uninjured limb. If pulses are palpable, proceed to Step 5. If there are no palpable pulses, the patient is tagged **IMMEDIATE** and the triage officer moves on.

- Step 5: At this point all patients have "adequate" ABCs. The triage officer performs a rapid AVPU assessment of mental status. If the patient is Alert, responds to Voice, or responds appropriately to Pain (withdraws from stimulus or pushes away), the patient is tagged **DELAYED** and the triage officer moves on. If the patient does not respond to voice and responds inappropriately to pain (moans or moves in a non-localizing fashion) or is Unresponsive, an **IMMEDIATE** tag is applied and the triage officer moves on to the next patient.

NOTE: All patients tagged **EXPECTANT/DECEASED**, unless clearly suffering from injuries incompatible with life, should be reassessed once critical interventions for **IMMEDIATE** and **DELAYED** victims are completed.

***Modifications for Non-Ambulatory Children**

Children in which this modification would be used include:

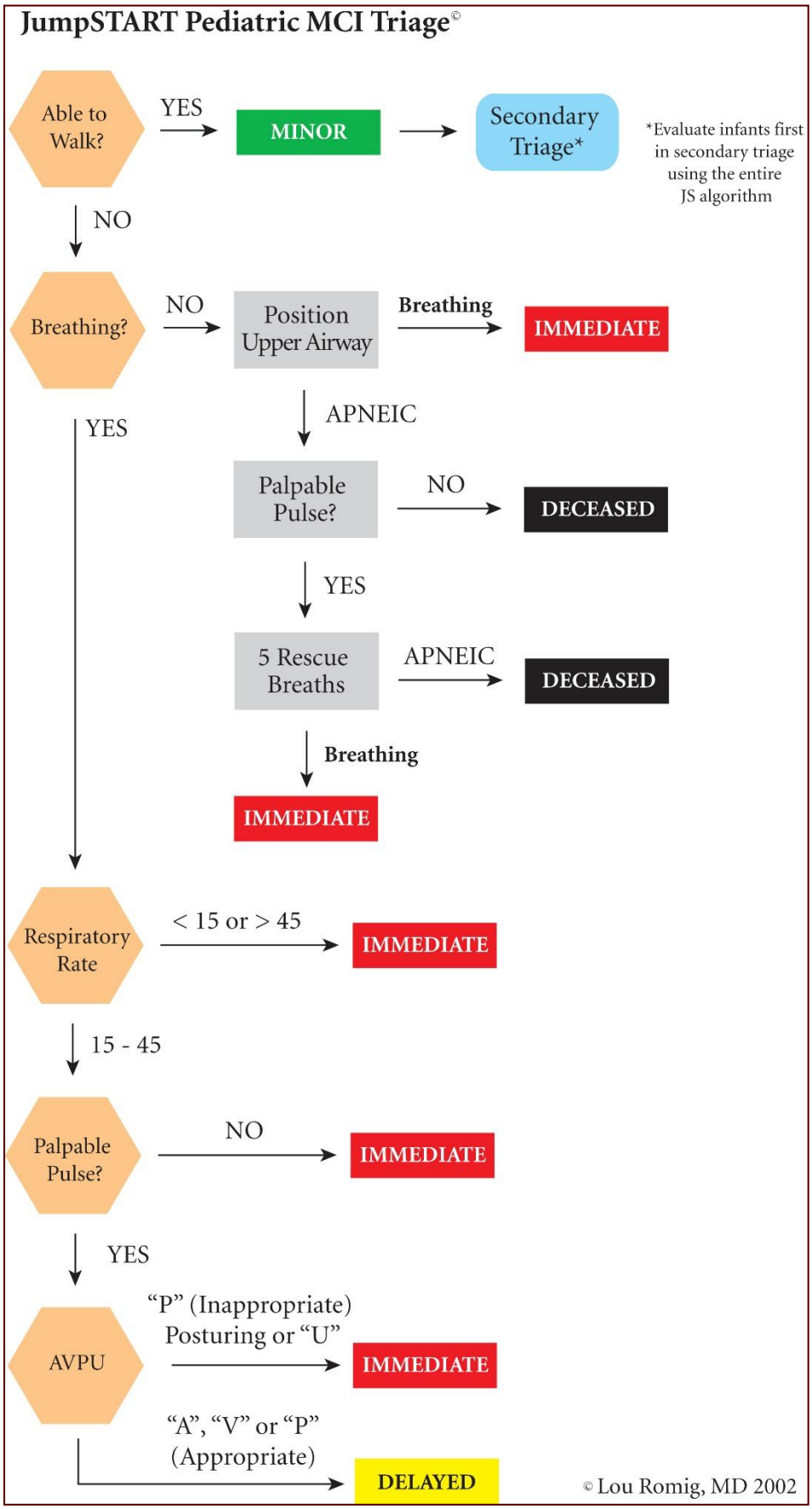
- Infants who normally can't walk yet
- Children with developmental delay
- Children with acute injuries which prevented them from walking ***before*** the incident occurred
- Children with chronic disabilities

Non-ambulatory children who meet the above criteria are evaluated using the **JumpSTART©** algorithm beginning with Step 2. If the child meets any **IMMEDIATE** criteria, the child is tagged **IMMEDIATE**. A quick survey is then conducted to determine whether there are any significant external signs of injury (i.e. deep penetrating wounds, severe bleeding, severe burns, amputations, distended tender abdomen or multiple bruises). If any significant external signs of injury are present, the child is tagged **DELAYED**. Non-ambulatory children without any significant external injury, with all other aspects of the **JumpSTART©** algorithm normal, are tagged **MINOR**.

NOTE: Final disposition (transport destination) depends on local and regional resources. Drills and table top exercises should include discussion about transport based on the actual resources available to the participants.

This information was obtained from the JumpSTART© Pediatric MCI Triage Tool website. The **JumpSTART©** pediatric MCI field triage tool was developed by Lou Romig, M.D. Pediatric Emergency Medicine at Miami Children's Hospital in Miami, FL in 1995 and modified in 2002. For additional information visit www.jumpstarttriage.com.

JumpSTART© TRIAGE ALGORITHM



Scenarios

SCENARIO 1

8:15 a.m. A call to 911 is received. As 5th grade students were arriving by bus this morning to XYZ Middle School for a science lab field trip, several children noted an unusually large pipe on the lawn outside a classroom window near the back parking lot. The assistant principal, who phoned in the concern, offered to meet police outside the front of the school near the main office in about five minutes. There were two sick calls with office staff today, including the principal. Until substitute teachers arrive, the assistant principal is busy with morning announcements.

As the first police unit arrives, an explosion occurs near the back of the school, taking down the outside wall and windows of at least one classroom. The responding officer calls dispatch to report the event and requests additional personnel and EMS at the scene.

This middle school houses more than 500 individuals including students and staff. As the smoke outside clears, it is evident that at least one affected room is the science lab where the visiting 5th graders, a teacher and student teacher were present. The adjacent rooms are another science lab and the lab supplies storage room. Across the hallway in this wing of the school are the nurse's office and the furnace/utility room.

The first few victims are able to move/stumble out of the wreckage. They are coughing with eyes tearing, complaining of chest tightness, stomach cramping, and runny noses. On exam they all have constricted pupils.

The assistant principal, visibly shaken, mumbles something about the science teacher being recently separated from her husband, and that she had recently been able to secure an order of protection from him. Apparently he had retired from his post as an explosives expert in a branch of the military reserves. He also had been employed by the school district but was on leave pending a psychiatric assessment after threats he had made to his wife.

> **STOP: At this point, please identify and list important considerations for this component of the scenario, including the possible exposure to a nerve agent or choking agent. In addition, this scenario can be adapted at this point depending on the training participants' ' disciplines. For example, if the training participants are pre-hospital providers, the scenario can be tailored to their role in responding to the scene or if the training participants are hospital based providers, the scenario can be followed as written.**

Additional rescue units arrive on the scene. Neighbors and parents who have heard the sirens start to gather outside the school and are becoming panicked and hysterical. The first television news crews arrive and several morning traffic helicopters are heard overhead.

A fire erupts in the science storage lab where liquid chemicals had spilled and poured onto the floor. The fire quickly spreads across to the nurse's room where the parent information forms are stored. The nurse is found unconscious with head injuries. More victims are located in the science labs and hallway. Smoke is filling the school hallways.

8:45 am. You are the charge nurse of a local ED located a couple of blocks from the school affected by this incident and have been notified to expect victims. Your waiting room is already filled with patients waiting to be seen. You and the ED physician begin to discuss how to respond.

9 a.m. While you're trying to put in place all the pieces to handle the expectant arrival of victims from the school, several parents of children who attend XYZ School show up in your ED inquiring about their children. At the same time several children from the affected school and several teachers walk into your emergency department.

> **STOP: At this point, what would you do next? Please identify and list important considerations for this component of the scenario**

Using the appropriate triage algorithm, categorize each of the following victims and provide justification for selecting that category.

SCENARIO 1 VICTIM LIST				
VICTIM	**RESPIRATORY RATE**	**PERFUSION**	**MENTAL STATUS**	**OTHER**
Teen M	RR 38	Radial pulse present	Knows name and can recall incident	Facial burns, coughing, pupils constricted
Child F	RR 32	Palpable pulse	Alert, crying hysterically	Multiple small lacs with embedded wood and glass entire dorsal area of body, head to foot
Child M	RR 12	Weak, thready pulse	Disoriented to place and time	Hematoma forehead, facial lacerations
Adult M	RR 48	Capillary refill > 2	Moaning, unable to follow commands	Large glass chard protruding from abdomen, wheezing
Teen F	RR 8	Pulse absent	Unresponsive	Impaled onto shelving brackets on wall
Child M	RR 36	Pulse present	Won't speak but makes eye contact with touch	Bleeding from ears, bruise on neck
Child F	RR 0	Weak radial pulse	Unresponsive	Trapped under rubble; apneic after 5 rescue breaths
Child F	RR 52	Thready pulse	Confused	Coughing, brisk bleeding from facial and hand lacerations
Teen M	RR 40	Pulse present	Disoriented to place and time	Scalp lacerations, burns to upper extremities
Child M	RR 10	Weak rapid pulse	Unresponsive	Bunsen burner imbedded in upper arm - heavy bleeding
Child M	RR 40	Pulse present	Responds appropriately to painful stimuli	Open femur fracture, lacerations to hands and face
Teen F	RR 48	Pulse rapid and weak	Responds only to touch	Deformity right upper extremity, glass shrapnel in scalp
Child F	RR 32	Pulse present	Crying but oriented x 3	Open fracture lower leg; contusions to arms and chest
Child M	RR 36	Bounding pulse	Alert but won't speak	Burns to neck and torso, lacerations to arms
Teen F	RR 44	Pulse weak	Hysterical	Partial amputation right forearm
Adult F	RR 28	Capillary refill <2	Crying for help, able to recall events	Leg caught under lab desk and chairs - open fracture
Teen M	RR 10	Pulse present - slow	Unresponsive	No obvious injuries
Teen F	RR Unable to count	Rapid pulse	Crying hysterically, will not answer questions	Grabbing rescuers
Child M	RR 24	Pulse present	Alert	Vomiting, drooling, incontinent
Child F	RR 0	Absent pulse	Unresponsive	Trapped under rubble
Child M	RR 32	Rapid pulse	Alert and anxious	Coughing, vomiting, incontinent, tearing, runny nose
Child F	RR28	Rapid pulse	Alert	Crying, no obvious injuries
Child M	RR 34	Rapid pulse	Keeps asking same questions	Tearing, runny nose, incontinent
Child F	RR 30	Rapid thready pulse	Sleepy - difficult to arouse	Diaphoretic
Child F	RR 28	Pulse present	Alert	Can currently speak, facial, neck and upper extremity burns
Child M	RR 50	Pulse present	Confused	Wheezing, facial and torso burns
Child F	RR 44	Radial pulse weak	Responds to verbal stimuli, disoriented	Large bruise forming on abdomen, burns on legs

Scenario 1 Instructor Resource

On the following page, the correct triage category designation is listed for each of the sample victims based on the information provided. START is used for teen and adult victims. JumpSTART© is used for infants and children. Your disaster drill may incorporate additional information on each victim which may result in a different triage assignment. In addition, the availability of resources, such as an antidote to the nerve agent simulated in this scenario, may also result in a different triage assignment.

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Scenario #1: Victim List with Triage Category Designation					
VICTIM	**RESPIRATORY RATE**	**PERFUSION**	**MENTAL STATUS**	**OTHER**	**TRIAGE CATEGORY**
Teen M	RR 38	Radial pulse present	Knows name and can recall incident	Facial burns, coughing, pupils constricted	IMMEDIATE
Child F	RR 32	Palpable pulse	Alert, crying	Multiple small lacs with embedded wood and glass entire dorsal area of body, head to foot	DELAYED
Child M	RR 12	Weak, thready pulse	Disoriented to place and time	Hematoma forehead, facial lacerations	IMMEDIATE
Adult M	RR 48	Capillary refill > 2	Moaning, unable to follow commands	Large glass chard protruding from abdomen, wheezing	IMMEDIATE
Teen F	RR 8	Pulse absent	Unresponsive	Impaled onto shelving brackets on wall	IMMEDIATE
Child M	RR 36	Pulse present	Won't speak but makes eye contact with touch	Bleeding from ears, bruise on neck	DELAYED
Child F	RR 0	Weak radial pulse	Unresponsive	Trapped under rubble; apneic after 5 rescue breaths	EXPECTANT/ DECEASED
Child F	RR 52	Thready pulse	Confused	Coughing, brisk bleeding from facial and hand lacerations	IMMEDIATE
Teen M	RR 40	Pulse present	Disoriented to place and time	Scalp lacerations, burns to upper extremities	IMMEDIATE
Child M	RR 10	Weak rapid pulse	Unresponsive	Bunsen burner imbedded in upper arm - heavy bleeding	IMMEDIATE
Child M	RR 40	Pulse present	Responds appropriately to painful stimuli	Open femur fracture, lacerations to hands and face	DELAYED
Teen F	RR 48	Pulse rapid and weak	Responds only to touch	Deformity right upper extremity, glass shrapnel in scalp	IMMEDIATE
Child F	RR 32	Pulse present	Crying but oriented x 3	Open fracture lower leg; contusions to arms and chest	DELAYED
Child M	RR 36	Bounding pulse	Alert but won't speak	Burns to neck and torso, lacerations to arms	DELAYED
Teen F	RR 44	Pulse weak	Hysterical	Partial amputation right forearm	IMMEDIATE
Adult F	RR 28	Capillary refill <2	Crying for help, able to recall events	Leg caught under lab desk and chairs - open fracture	DELAYED
Teen M	RR 10	Pulse present - slow	Unresponsive	No obvious injuries	IMMEDIATE
Teen F	RR Unable to count	Rapid pulse	Crying hysterically, will not answer questions	Grabbing rescuers	IMMEDIATE
Child M	RR 24	Pulse present	Alert	Vomiting, drooling, incontinent	MINOR
Child F	RR 0	Absent pulse	Unresponsive	Trapped under rubble	EXPECTANT/ DECEASED
Child M	RR 32	Rapid pulse	Alert and anxious	Coughing, vomiting, incontinent, tearing, runny nose	DELAYED
Child F	RR28	Pulse present	Alert	Walking around and crying, no obvious injuries	MINOR
Child M	RR 34	Rapid pulse	Alert but keeps asking same questions	Tearing, runny nose, incontinent	MINOR
Child F	RR 30	Rapid thready pulse	Sleepy - difficult to arouse	Diaphoretic	IMMEDIATE
Child F	RR 28	Pulse present	Alert	Can currently speak and walk, minor burn on left arm	MINOR
Child M	RR 50	Pulse present	Confused	Wheezing, facial and torso burns	IMMEDIATE
Child F	RR 44	Radial pulse weak	Responds to verbal stimuli	Large bruise forming on abdomen, burns on legs	DELAYED

SCENARIO 2

A group of first and second grade students with their teacher/chaperones are enroute via school busses for a field trip. As the caravan of busses, filled to capacity, slow for their exit off the highway, a speeding semi-trailer truck behind the last bus crashes into it, forcing that bus forward into the bus ahead. The back of the rear bus is crushed into the mid-section; the forward bus is overturned. The contents of several 55 gallon drums from the truck spill onto the highway. The placards on the truck read "Dangerous." The state trooper who witnessed the collision calls in that the truck driver is unconscious. Some children have been ejected from a bus, some are trapped and a few are walking along the road appearing dazed.

None of the children are carrying identification. Their luggage and box of emergency forms were housed in the back of the rear bus, which is now filling with smoke. A school nurse is one of the chaperones for the field trip.

STOP: At this point, please identify and list important considerations for this component of the scenario including exposures to smoke and possibly contents from the truck. In addition, this scenario can be adapted at this point depending on the training participants' disciplines. For example, if the training participants are pre-hospital providers, the scenario can be tailored to their role in responding to the scene or if the training participants are hospital based providers, the scenario can be followed as written.

The nearest hospital is a small rural hospital. Their ED seldom sees critically ill/injured children. You are in charge of the ED on this day.

Using the appropriate triage algorithm, categorize each of the victims and provide justification for selecting that category.

Scenario #2 Victim List

VICTIM	RESPIRATORY RATE	PERFUSION	MENTAL STATUS	OTHER
7 y/o F	RR 10	Distal pulse present	Groans in response to painful stimuli	Lying in ditch 15 feet from accident
50 y/o F	RR 20	Capillary refill 2 seconds	Obeys commands	Sitting on shoulder of road complaining of dizziness
8 y/o M	Talking	Distal pulse present	Asking for help	Walks toward you, clothing is torn, no bleeding evident
6 y/o F	RR 0	No pulse	Unresponsive	Legs trapped under seat from bus
39 y/o M	RR 28	Capillary refill 4 seconds	Moaning	Bus driver trapped under collapsed dash in front bus
7 y/o M	RR 48	Distal pulse present	Blank stare	Lying in wreckage, bilateral lower extremity deformity
30 y/o M	RR 20	Capillary refill 2 seconds	Obeys commands	Walking at scene
8 y/o F	RR 28	Distal pulse present	Follows commands	Facial and scalp lacerations - moderate bleeding
6 y/o F	RR 0	Faint distal pulse	Unresponsive	Found in rubble outside rear bus; apneic after 5 rescue breaths
6 y/o M	RR 40	Pulseless	Withdraws from painful stimuli	Arm deformity, sucking chest wound
8 y/o M	RR 36	Distal pulse present	Screaming	Partial amputation of foot with minimal bleeding. Found in ditch
45 y/o F	RR 0	Pulseless	Unresponsive	Driver of rear bus, found under front of bus
7 y/o F	RR 24	Distal pulse present	Crying	Limping near busses
7 y/o M	RR 38	Absent distal pulse	Groans, stops when spoken to	Lying near bus
8 y/o F	RR 24	Distal pulse present	Asking for her wheelchair	Found wedged under bus seat
7 y/o M	RR 22	Distal pulse present	Obeys commands	Complains cannot move or feel legs
6 y/o M	RR 28	Distal pulse present	Not following commands	Sitting on shoulder of road, blood in ears.
25 y/o F	RR 12	Capillary refill > 4 seconds	Eye movement in response to stimuli. Not speaking	Appears six months pregnant

Scenario 2: Instructor Resource

In the table below, the correct triage category designation is listed for each of the sample victims based on the information provided. START was used for teen and adult victims. JumpSTART© was used for infants and children. Your disaster drill may incorporate additional information on each victim which may result in a different triage assignment. In addition, the availability of resources, such as equipment for extrication in this scenario, may also result in a different triage assignment.

Scenario #2: Victim List with Triage Category Designation

VICTIM	RESPIRATORY RATE	PERFUSION	MENTAL STATUS	OTHER	TRIAGE CATEGORY
7 y/o F	RR 10	Distal pulse present	Groans in response to painful stimuli	Lying in ditch 15 feet from accident	IMMEDIATE
50 y/o F	RR 20	Capillary refill 2 seconds	Obeys commands	Sitting on shoulder of road complaining of dizziness	DELAYED
8 y/o M	Talking	Distal pulse present	Asking for help	Walks toward you, clothing is torn, no bleeding evident	MINOR
6 y/o F	RR 0	No pulse	Unresponsive	Legs trapped under seat from bus	EXPECTANT/ DECEASED
39 y/o M	RR 28	Capillary refill 4 seconds	Moaning	Bus driver trapped under collapsed dash in front bus	IMMEDIATE
7 y/o M	RR 48	Distal pulse present	Blank stare	Lying in wreckage, bilateral lower extremity deformity	IMMEDIATE
30 y/o M	RR 20	Capillary refill 2 seconds	Obeys commands	Walking at scene	MINOR
8 y/o F	RR 28	Distal pulse present	Follows commands	Facial and scalp lacerations - moderate bleeding	MINOR
6 y/o F	RR 0	Faint distal pulse	Unresponsive	Found in rubble outside rear bus; apneic after 5 rescue breaths	EXPECTANT/ DECEASED
6 y/o M	RR 40	Pulseless	Withdraws from painful stimuli	Arm deformity, sucking chest wound	IMMEDIATE
8 y/o M	RR 36	Distal pulse present	Screaming	Partial amputation of foot with minimal bleeding. Found in ditch	DELAYED
45 y/o F	RR 0	Pulseless	Unresponsive	Driver of rear bus found under front of bus	EXPECTANT/ DECEASED
7 y/o F	RR 24	Distal pulse present	Crying	Limping near busses	MINOR
7 y/o M	RR 38	Absent distal pulse	Groans, stops when spoken to	Lying near bus	IMMEDIATE
8 y/o F	RR 24	Distal pulse present	Asking for her wheelchair	Found wedged under bus seat	DELAYED
7 y/o M	RR 22	Distal pulse present	Obeys commands	Complains cannot move or feel legs	DELAYED
6 y/o M	RR 28	Distal pulse present	Not following commands	Sitting on shoulder of road, blood in ears.	IMMEDIATE
25 y/o F	RR 12	Capillary refill > 4 seconds	Eye movement in response to stimuli, not speaking	Appears six months pregnant	IMMEDIATE

SCENARIO 3

The town emergency siren has been activated. A tornado has been spotted west of town. A local child care center currently housing 35 children from 2 months to 4 years of age appears to be in the direct path of the

tornado. Indeed, the tornado passes through town causing severe damage throughout the town and in particular to the child care center.

An assessment of the childcare center reveals the following: portions of the roof are missing; windows are shattered and shards of glass are everywhere; a large bookcase full of books, toys and supplies has toppled; file cabinets have been overturned as have some cribs, cots and chairs. One of the workers reports she smells gas. Outside the child care center, trees and utility wires are down. A large tree branch is blocking the main entrance to the center. There is no electricity and the telephone is dead. An infant is noticed crawling amidst broken glass on the floor and a crying toddler is sitting in the middle of the floor with cuts on his hands, face and upper torso. Outside approximately 20 yards from the building, a preschooler is on the ground and not moving. Other toddlers and children are wandering aimlessly about. It continues to rain hard with winds up to 20-30 mph.

STOP: At this point, please identify and list important considerations for this component of the scenario

Using the appropriate triage algorithm, categorize each of the victims and provide justification for selecting that category.

Scenario #3 Victim List

VICTIM	RESPIRATORY RATE	PERFUSION	MENTAL STATUS	OTHER
Preschool F	RR 10	Weak, thready pulse	Unresponsive	Outside building, face down on ground
Preschool M	RR 18	Irregular pulse	Responds appropriately to painful stimuli	Trapped under bookcase and books
Infant F	RR 24	Pulse present	Crying, responds to voice	Sitting on floor; cuts on face, hands and legs
Infant F	RR 12	Pulse present	Responds to stimuli, weak cry	On floor next to overturned crib; hematoma on forehead
30 y/o F	RR 28	Pulse present	Obeys commands	Sitting against a wall, deformity to left lower leg.
Toddler F	RR 20	Pulse present	Crying loudly, wandering about	Grabbing at and clinging to workers
Preschool M	RR 22	Pulse present	Doesn't acknowledge workers; screaming	Standing in middle of room; no obvious injuries
Infant M	RR 32	Rapid pulse	Eyes open, quiet, still	Pieces of glass and debris in crib; no obvious injuries noted
Infant F	RR 0	Absent pulse	Unresponsive	Trapped under overturned metal file cabinet
Toddler M	RR 8	Faint pulse	Responds inappropriately to pain	Both legs trapped under overturned file cabinet
Toddler F	RR 0	Palpable pulse	Unresponsive	Large gash on scalp; large piece of glass embedded in abdomen; spontaneous respirations after 5 rescue breaths
42 y/o F	RR 10	Pulse weak	Does not follow commands	Outside building, lying on the ground

In the table below, the correct triage category designation is listed for each of the sample victims based on the information provided. START was used for teen and adult victims. JumpSTART© was used for infants and children. Your disaster drill may incorporate additional information on each victim which may result in a different triage assignment.

Scenario #3: Victim List with Triage Category Designation

VICTIM	RESPIRATORY RATE	PERFUSION	MENTAL STATUS	OTHER	TRIAGE CATEGORY
Preschool F	RR 10	Weak, thready pulse	Unresponsive	Outside building, face down on ground	IMMEDIATE
Preschool M	RR 18	Irregular pulse	Responds appropriately to pain	Trapped under bookcase and books	DELAYED
Infant F	RR 24	Palpable pulse.	Crying; responds to voice	Sitting on floor; cuts on face, hands and legs	MINOR
Infant F	RR 12	Palpable pulse	Responds to stimuli; weak cry	On floor next to overturned crib; hematoma on forehead	IMMEDIATE
30 y/o F	RR 28	Pulse present	Obeys commands	Sitting against a wall, deformity to left lower leg.	DELAYED
Toddler F	RR 20	Palpable pulse	Crying loudly; wandering about	Grabbing at and clinging to workers	MINOR
Preschool M	RR 22	Palpable pulse	Doesn't acknowledge workers; screaming	Standing in middle of room; no obvious injuries	MINOR
Infant M	RR 32	Rapid pulse	Eyes open, quiet, still	Pieces of glass and debris in crib; no obvious injuries noted	IMMEDIATE
Infant F	RR 0	Absent pulse	Unresponsive	Trapped under overturned metal file cabinet	EXPECTANT/ DECEASED
Toddler M	RR 8	Faint pulse	Responds inappropriately to pain	Both legs trapped under overturned file cabinet	IMMEDIATE
Toddler F	RR 0	Palpable pulse	Unresponsive	Large gash on scalp; large piece of glass embedded in abdomen; spontaneous respirations after 5 rescue breaths	IMMEDIATE
42 y/o F	RR 10	Pulse weak	Unresponsive	Outside building, lying on the ground	IMMEDIATE

For the following three scenarios, create your own victim list based on the information provided in the scenario. Be sure to identify and list important considerations for these scenarios, such

as possible exposure to agents and the availability of antidotes, delay in EMS response due to unsafe scenes or extrication resources. The availability of such resources may affect triage assignment and should be considered when developing the victim list. In addition, these scenarios can be adapted at this point depending on the discipline of the training participants and the environment in which they work. For example, if the training participants are pre-hospital providers, tailor the scenario to their role in responding to the scene; if the training participants are school nurses, tailor the scenario to how they would respond on the scene; or if the training participants are hospital based providers, expand on the scenarios to include caring for these patients once they arrive at the hospital. Then, using the appropriate triage algorithm, categorize each of the victims and provide justification for selecting that triage category.

SCENARIO 4

At the local sports arena (high school or college football stadium) the regional (or state) Special Olympics track meet is being held. After the parade of contestants and anthems, local politicians and their entourage welcome the children and parents to the event. Estimated attendance is more than 1,000 with hundreds of children and coaches gathered on the football field. Near the end of the opening speech an explosion occurs, apparently from the podium area. The blast sends several adults back toward the crowd of children and smoke billows over the field and the stadium seats adjacent to the explosion site. Initially many children are coughing and seem to be wheezing and crying. The scene is chaotic with panicked children and parents in the stadium seats attempting to find their children.

Victims:

- The left arm of one of the local politicians is partially amputated mid-arm, and his face and torso are badly burned. He is unconscious, RR is 12 and shallow, then ceases; distal pulse is thready.
- One assistant is face down and cyanotic with a large piece of wood protruding from his chest.
- The other aide appears to be six months pregnant and has burns to her arms, abdomen and has an open right tibia-fibula fracture.
- News reporters covering the event have burns and blunt trauma, with shrapnel embedded in their extremities.
- As first responders arrive they find at least 10 children who appear to be having seizures and quickly progress to full arrest.
- Other children in the area exhibit tearing, coughing, have runny noses and seem to drool.
- Additional victims further from the blast site complain of chest tightness and eyes tearing.

SCENARIO 5

It's lunchtime on a warm sunny day at the local grade school. The first and second grade children are enjoying recess on the playground while the third and fourth graders are in the cafeteria. Without warning, gunfire erupts outside on the playground. A deranged young woman runs through the area shooting a gun. She charges into the school through the kitchen door, which is propped open to the playground, and continues to randomly fire a weapon in the cafeteria. She then runs out of the school, disappearing into the wooded lot behind the school. In less than two minutes more than a dozen children and five adults are down with countless more spattered with blood, crying and screaming. Two of the injured children are known to be HIV positive.

Your emergency department is the closest to the affected school. As usual, the ED has been busy and there are several patients in the waiting room. Your 11a.m. to 11p.m. shift is now at work and the Fast Track area is open.

At 12:15 p.m. you receive notification of the school shooting incident and to expect victims to your ED. You discuss the incident with the ED physician who indicates you need to contact the on-call trauma surgeon. The trauma surgeon is in surgery.

SCENARIO 6

The museum is opening its latest exhibit. Several schools have brought children to the facility for a field trip. There are approximately 250 children from these schools in addition to the regular daily attendance. Midway

through the day an unusual odor begins to fill the building, apparently coming from the ventilation system. It is the first day the heat has been on since being serviced in preparation for the cold weather. Many of the children and chaperones begin to complain of not feeling well. Initial symptoms include headache, lethargy and nausea.

In addition, snow has begun to fall heavily since morning and local roadways are in need of plowing. Numerous spin out vehicular crashes have been reported near the museum. There are several hospitals in the area, with the closest being a small community hospital.

Resources:

- Illinois EMS for Children Program: www.luhs.org/emsc
- Illinois EMS for Children's Pediatric Disaster Triage: Utilizing the JumpSTART© Method: http://www.luhs.org/depts/emsc/JumpSTART.htm
- JumpSTART© Pediatric MCI Triage Tool: www.jumpstarttriage.com.
- Simple Triage and Rapid Treatment (START): www.start-triage.com