Detroit SonoWAR 2024

#4 Water Extrication Station

Let us take a moment to remember a fallen hero, Detroit Fire Sgt. Sivan Johnson, who died in 2020 while helping save 3 girls from drowning at Belle Isle. Per The Detroit News,

> "*The 26-year veteran of the department and his daughter were walking near the Yacht Club when they heard three young girls screaming for help from the water, Fornell told The Detroit News.*
>
> *"He's a firefighter, he saw the girls in distress and jumped in. He's done that his entire career," Fornell said. "Something happened, and it's unfortunate to have lost one of our own that way." …*
>
> *"It is believed [Johnson] may have been dragged underwater by the rip-current and no one noticed," Michigan State Police said."[1]*
>
> *"Johnson was a 26-year veteran of the Detroit Fire Department's Fire Engine 59 and a recipient of the 2017 Medal of Valor. "He was my idol," said Jamal Johnson, Sgt. Sivad Johnson's brother. "He was always a hero to me." Sgt. Johnson always wanted to help others and he died doing just that."[2]*

In this scenario, your team is kayaking on some of Michigan's numerous rivers and waterways and encounter a mass casualty drowning accident, with no immediate road access nearby for EMS/rescue services to reach you.

You must split your team up to best address the needs of these victims

GROUP ALPHA

Construct a makeshift litter to facilitate extraction of the victims and determine which need evacuation first
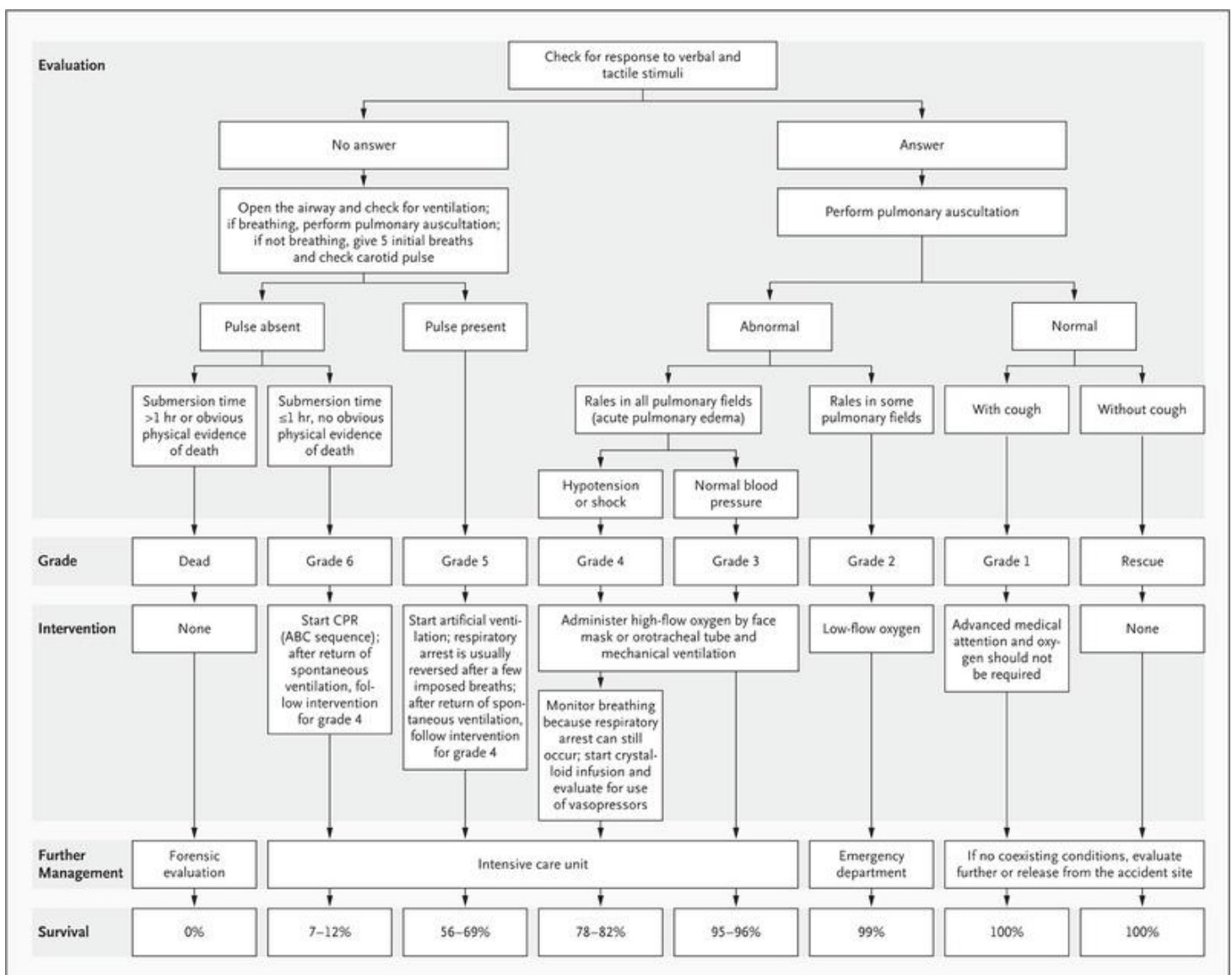
GROUP DELTA

Up to 4 teammates must row out to the victims and bring them safely to the group
(must have signed waiver, QR code below)

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Consider Reviewing these articles / resources:

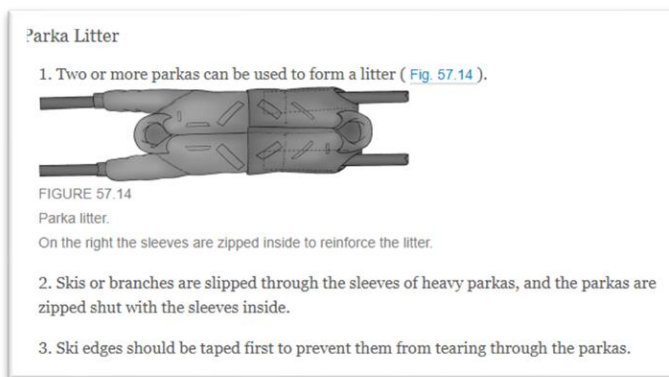- Szpilman, D et al. *Drowning*, New England Journal of Medicine, 2012.

Evaluation								
	Check for response to verbal and tactile stimuli							
	No answer				Answer			
	Open the airway and check for ventilation; if breathing, perform pulmonary auscultation; if not breathing, give 5 initial breaths and check carotid pulse				Perform pulmonary auscultation			
	Pulse absent		Pulse present	Abnormal		Normal		
	Submersion time >1 hr or obvious physical evidence of death	Submersion time ≤1 hr, no obvious physical evidence of death		Rales in all pulmonary fields (acute pulmonary edema)	Rales in some pulmonary fields	With cough	Without cough	
				Hypotension or shock / Normal blood pressure				
Grade	Dead	Grade 6	Grade 5	Grade 4	Grade 3	Grade 2	Grade 1	Rescue
Intervention	None	Start CPR (ABC sequence); after return of spontaneous ventilation, follow intervention for grade 4	Start artificial ventilation; respiratory arrest is usually reversed after a few imposed breaths; after return of spontaneous ventilation, follow intervention for grade 4	Administer high-flow oxygen by face mask or orotracheal tube and mechanical ventilation / Monitor breathing because respiratory arrest can still occur; start crystalloid infusion and evaluate for use of vasopressors		Low-flow oxygen	Advanced medical attention and oxygen should not be required	None
Further Management	Forensic evaluation	Intensive care unit				Emergency department	If no coexisting conditions, evaluate further or release from the accident site	
Survival	0%	7–12%	56–69%	78–82%	95–96%	99%	100%	100%

https://www.nejm.org/doi/full/10.1056/NEJMra1013317

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- The United States Army. *Reach, Throw, Row – Don't Go!,* website, 2011

- T-shirts, life jackets, or parkas can be used with tree branches to fashion an improvised litter for evaucation. Per the <u>Field Guide to Wilderness Medicine, 5th Ed</u>:

Parka Litter

1. Two or more parkas can be used to form a litter (Fig. 57.14).

FIGURE 57.14
Parka litter.
On the right the sleeves are zipped inside to reinforce the litter.

2. Skis or branches are slipped through the sleeves of heavy parkas, and the parkas are zipped shut with the sleeves inside.

3. Ski edges should be taped first to prevent them from tearing through the parkas.

Carrying a Litter in the Wilderness

• It takes at least six rescuers to carry a patient in a litter a short distance (0.4 km [0.25 mile] or less) over relatively flat terrain.

• With six rescuers, four can carry the litter while the other two clear the area in the direction of travel and assist in difficult spots.

• Depending on the terrain and weight of the patient, all six rescuers may be necessary to safely carry the litter any distance.

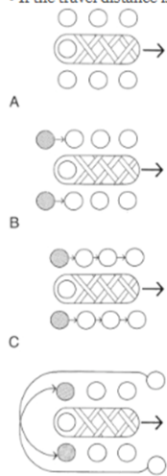• If the travel distance is longer, many more rescuers are required (Fig. 57.25).

FIGURE 57.25
Litter-carrying sequence.
A, Six rescuers are usually required to carry a litter, but may need relief over long distances (farther than 0.25 mile). B, Relief rescuers can rotate into position while the litter is in motion by approaching from the rear. As relief rescuers move forward (C) , the forwardmost rescuers can release the litter (peel out) and move to the rear (D) . Rescuers in the rear can rotate sides so that they can alternate carrying arms. Carrying straps (webbing) can also be used to distribute the load over the rescuers' shoulders. In most cases, the litter is carried feet first with a medical attendant at the head monitoring airway, breathing, level of consciousness, and so forth.

1 Point	Navigate to this station.
1 Point	You do not have the advanced training in rescue that Fire Sgt Johnson had. For laypersons, The American Red Cross and the US Army Corps of Engineers advocate the "Reach Throw Row – Don't Go"[4,5] policy to help someone in distress in the water. What are at least three options you have to assist a potential drowning victim?
1 Point	*"The principles of lung ultrasound used in other respiratory emergencies seem to be applicable in the evaluation of drowning and near-drowning victims."[3]* Auscultating for rales is stupid. What findings would you expect to find on lung ultrasound for a near drowning patient that are much more specific for pulmonary edema than "rales"?
1 Point	How many lung fields should be assessed with lung POCUS to count as assessing all pulmonary fields?
1 Point	Drowning victims may have more than one pathology (polytrauma). Other than lung sliding, what artifact on lung POCUS also *rules out* pneumothorax?
1 Point	Have Group Delta successfully demonstrate the "Reach Throw Row – Don't Go" technique to rescue two drowning victims and bring them to the shore for the rest of the team to assess
1 Point	Have Group Alpha successfully demonstrate how to create a makeshift litter using only the materials available
1 Point	Using POCUS, identify which of your two victims has a significantly worse prognosis and has a higher likelihood of requiring intubation and ICU admission (vs discharge from the emergency department)
1 Point	Have one of your teammates assume the role of the drowning victim you have identified as needing the most emergent care. Now carry them on the litter to the extraction point on the map!
1 Point	Many of the most dramatic and physiologically unexpected recoveries from cardiac arrest have been in young patients after cold-water drowning.[1] If there is any uncertainty, resuscitation attempts should continue until patient is rewarmed to what temperature?