



Drowning / Submersion

Assessment

Pediatric Pearls:

- Use pediatric dosing of medications or electrical therapy for a pediatric patient < 37 kg and as defined by the PEDIA Tape.
- Pediatric hypotension is defined as SBP < 70 + (age in years x 2) mmHg

Signs & Symptoms:

- Unresponsive
- Mental status changes
- Decreased or absent vital signs
- Vomiting
- Coughing

Differential:

- Trauma
- Pre-existing medical problem
- Pressure injury (diving)
 - Barotrauma
 - Decompression sickness
- Duration of immersion
- Temperature of water

Clinical Management Options

P	P	P	P	P	P	<ul style="list-style-type: none"> • Scene safety & decontaminate patient as needed
L	L	L	L	L	L	<ul style="list-style-type: none"> • Evaluate for Cardiac Arrest
1	2	3	4	5	6	<ul style="list-style-type: none"> • Oxygen, Target SpO₂: 92-94% • BLS airway management as needed • Evaluate for spinal motion restriction • Keep patient warm
						<ul style="list-style-type: none"> • If conscious and with wheezing, Albuterol & Ipratropium Bromide nebulizer • If conscious and with rales/rhonchi, CPAP
						<ul style="list-style-type: none"> • Vascular access
						<ul style="list-style-type: none"> • Evaluate ECG
						<ul style="list-style-type: none"> • Advance airway maneuvers and management as needed

Consult Online Medical Control As Needed

Pearls:

- Refer to drug formulary charts for all medication dosing for both adults and pediatric patients.
- Criteria for resuscitation includes suspected arrest from cause other than submersion, patient submersion time less than 20 minutes from witness of person going underwater or from arrival of the first Public Safety entity until the patient is in a position for resuscitative efforts to be initiated. On-scene rescuers should consider conversion from rescue to recovery at 20 minutes unless the patient is a diver with an air source or a patient trapped with a potential air source. Final decision for transition from rescue to recovery mode rests with on-scene command.
- SMR should be used when a suspected or known traumatic mechanism preceded the drowning.
- All victims should be transported for evaluation due to potential for worsening over the next several hours.
- Drowning is a leading cause of death among would-be rescuers. Allow appropriately trained rescuers to remove victims from areas of danger.
- With pressure injuries (decompression / barotrauma), if possible transport dive computer and/or dive logs with patient.
- Consider CPAP early if respiratory distress for any age if adequate mask seal can be established.
- Assess water temperature (< 10° C / < 50° F) defines cold water.