Pediatric Submersion/Drowning

For any submersion injury, including drowning and dive (decompression) emergencies

**History**
- Age
- Duration of submersion
- Water temperature
- Type of water (salt, fresh, pool, etc.)
- SCUBA Diving
- Trauma possible? (Diving into pool)

**Signs and Symptoms**
- Airway – Clear vs. Foam vs. water/vomit
- Spontaneous Breathing
- AMS
- Cold/Shivering
- Motor neuro exam/priapism
- Bradycardia

**Differential**
- Hypothermia
- Hypoglycemia
- CNS dysfunction
- Seizure
- Head injury
- Spinal cord injury

**Pearls**
- Check for pulselessness for 30-45 seconds to avoid unnecessary chest compressions.
- Defer ACLS medications in hypothermic patients until patient is warmed. Patients with hypothermia may have good neurologic outcome despite prolonged resuscitation; resuscitative efforts should continue until the patient is rewarmed.
- If V-Fib or pulseless V-Tach is present, shock x1, and defer further shocks.
- Extremes of age, malnutrition, alcohol, and other drug use are contributing factors to hypothermia.
- Patients with prolonged hypoglycemia often become hypothermic; blood glucose analysis is essential.
- If a temperature is unable to be measured, treat the patient based on the suspected temperature.
- Warm packs can be placed in the armpit and groin areas. Care should be taken not to place directly on skin.

**Notify receiving facility. Consider Base Hospital for medical direction**

**Emergency Hyperbaric Chambers**
John Muir Medical Center – Walnut Creek

**Establish IV/IO**
- Supplemental oxygen to maintain SpO₂ >92%
- Spinal motion restriction if indicated
- Gently move to a warm environment
- Remove wet clothing and cover with warm dry sheets or blankets
- Cardiac monitor
- Monitor and reassess

**Cardiac Arrest**

**Respiratory Distress**

**ALOC**

**Alert, awake, and oriented**

**Unresponsive**

**Awake but altered**

**Gently move to a warm environment**

**Remove wet clothing and cover with warm dry sheets or blankets**

**Monitor and reassess**

**Encourage transport and evaluation even if asymptomatic or with minimal symptoms**

**Supportive Measures**

- Cardiac monitor
- Monitor and reassess

**Supplemental oxygen to maintain SpO₂ >92%**

**Spinal motion restriction if indicated**

**Gently move to a warm environment**

**Remove wet clothing and cover with warm dry sheets or blankets**

**Establish IV/IO**

**Cardiac monitor**

**Monitor and reassess**