



# Drowning

## History

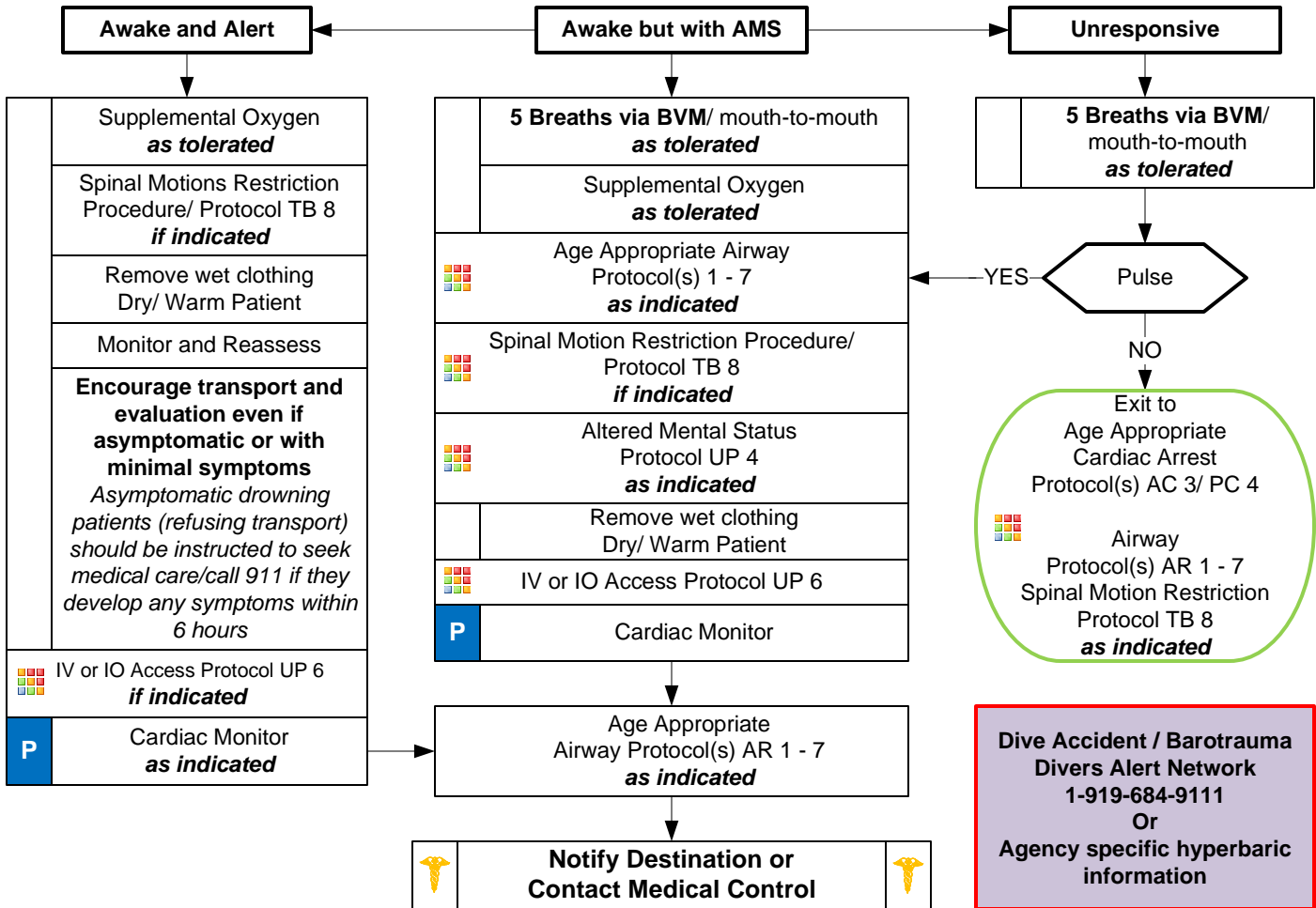
- Submersion in water regardless of depth
- Possible history of trauma
- Slammed into shore wave break
- Duration of submersion/ immersion
- Temperature of water or possibility of hypothermia

## Signs and Symptoms

- Unresponsive
- Mental status changes
- Decreased or absent vital signs
- Foaming/ Vomiting
- Coughing, Wheezing, Rales, Rhonchi, Stridor
- Apnea

## Differential

- Trauma
- Pre-existing medical problem
  - Hypoglycemia
  - Cardiac Dysrhythmia
- Pressure injury (SCUBA diving)
  - Barotrauma
  - Decompression sickness
- Post-immersion syndrome



Toxic-Environmental Protocol Section

## Pearls

- **Recommended Exam: Respiratory, Mental status, Trauma Survey, Skin, Neuro**
- **Drowning is the process of experiencing respiratory impairment (any respiratory symptom) from submersion/ immersion in a liquid.**
- **Begin with BVM ventilations, if patient does not tolerate, then apply appropriate mode of supplemental oxygen.**
- **Ensure scene safety. Drowning is a leading cause of death among would-be rescuers.**
- **When feasible, only appropriately trained and certified rescuers should remove patients from areas of danger.**
- **Regardless of water temperature – resuscitate all patients with known submersion time of ≤ 25 minutes.**
- **Regardless of water temperature – If submersion time ≥ 1 hour consider moving to recovery phase instead of rescue.**
- **Foam is usually present in airway and may be copious, DO NOT waste time attempting to suction. Ventilate with BVM through foam (suction water and vomit only when present.)**
- **Cardiac arrest in drowning is caused by hypoxia, airway and ventilation are equally important to high-quality CPR.**
- **Encourage transport of all symptomatic patients (cough, foam, dyspnea, abnormal lung sounds, hypoxia) due to potential worsening over the next 6 hours.**
- Predicting prognosis in prehospital setting is difficult and does not correlate with mental status. Unless obvious death, transport.
- Hypothermia is often associated with drowning and submersion injuries even with warm ambient conditions.
- Drowning patient typically has <1 – 3 mL/kg of water in lungs (does not require suction) Primary treatment is reversal of hypoxia.
- Spinal motion restriction is usually unnecessary. When indicated it should not interrupt ventilation, oxygenation and/ or CPR.