

OhioHealth Emergency Medical Services

NEWSLETTER FOR EMS PROFESSIONALS

Drowning Emergencies

Drowning is a process resulting in primary respiratory impairment from submersion and immersion in a liquid. Submersion describes the airway opening beneath the surface of the liquid-air interface while immersion is the splashing of liquid in or around the airway.

The first step in drowning management is to quickly extract the victim from the water. Scene safety and crowd control are paramount to preventing secondary victims. Once the victim is extricated from the water, airway management should begin immediately with BVM ventilation. Advanced airway management in water is appropriate for those competent in the skill as it poses risk of aspiration and delay of CPR.

Rescuers should initiate CPR as soon as practical. Cardiac arrest treatment algorithms do not typically require modification for drowning victims, but anticipate vomiting as it occurs in up to 86 percent of drowning victims receiving rescue breathing and chest compressions.

Airway management, hemodynamic stabilization and transport are the mainstays of treatment. These individuals may be apneic, hypotensive or hypothermic and should receive appropriate resuscitative interventions. Nonfatal drowning patients have strong potential for pulmonary injury and should receive Emergency Department (ED) evaluation.

More than half of nonfatal drowning victims require hospital admission. These patients should be transported and evaluated as initial presentation can progress rapidly. Degree and duration — which is directly related to submersion time — of cerebral hypoxia plays a significant role in a victim's functional recovery. Many drowning survivors suffer some permanent neurologic damage, with up to 10 percent suffering severe lasting effects.

Robert Lowe, MD, FACEP, FAEMS
OhioHealth Doctors Hospital
Clinical Professor of Emergency Medicine
Ohio University Heritage College of Osteopathic Medicine

Educational Calendar

EMS Quarterly Updates

OhioHealth Grant Medical Center
August 11, 2018
November 3, 2018

EMS Regional Quarterly Updates

Columbus Zoo
September 6, 2018

OhioHealth Dublin Methodist Hospital
October 18, 2018

Trauma Care 2018
Hilton Columbus at Easton
December 4–5, 2018

[Click here for more information.](#)

Case Study

A 71-year-old female with a medical history of seizures and blood clots presented with stuttering symptoms of aphasia, right facial droop, dysarthria and right-sided weakness.

The patient arrived at an OhioHealth Stroke Network site for imaging which showed no acute intracranial process. The patient was transferred to Riverside Methodist for further imaging where CT Angiogram showed left MCA embolus and the patient was taken for a thrombectomy.

The patient went home three days later without neurologic deficit thanks to physician collaboration within The OhioHealth Stroke Network.

Michelle Hill, MS, RN, AGCNS-BC, CNRN, CCRN, SCRN
Comprehensive Stroke Program Coordinator
OhioHealth Riverside Methodist Hospital



In the Field

Fire and EMS units were dispatched to a large apartment complex for a potential drowning victim. On arrival, a young male was poolside having CPR administered by bystanders. He reportedly dove into the pool and, after not surfacing for five to six minutes, was rescued from the water.

Upon arrival, CPR was continued and BVM was initiated followed by intubation with inline cervical stabilization. An IV was given with a single dose of epinephrine and once spontaneous circulation returned, trauma center transportation was arranged.

No intracranial bleeding was present, but mild pulmonary injury was noted. With recovery in days, the patient was extubated by day three. Though suffering a cervical spine injury, the patient should make a good cerebral recovery. Through months of rehabilitation, motion of arms and legs was recovered and patient could walk with a cane.

C-spine injuries should be considered in all diving, high-impact water, white water and submersion injuries. However, we must weigh the risks and benefits of cervical immobilization. For example, cervical immobilization may be dangerous and difficult in swift water rescues. The American Heart Association guidelines state, "Routine stabilization of the cervical spine is not necessary unless the circumstances leading to the submersion episode indicate that trauma is likely." In any event, if concerned for cervical injury, the cervical protection measures should be instituted.

Robert Lowe, MD, FACEP, FAEMS

Pediatric Medical Emergencies

Anaphylaxis is a disorder characterized by the acute onset of skin or mucosal area involvement (hives or swollen lips), respiratory symptoms and/or reduced blood pressure. The most common triggers for children are food allergies (peanuts, tree nuts, shell fish, etc.), medications or bee stings. As a clinical diagnosis, testing is not required and immediate treatment is necessary. So, if your patient meets the criteria, IM epinephrine is the treatment of choice.

Another emergency to look out for is vehicular hyperthermia—an awful and preventable cause of heat stroke in young children. Let's say it's an extremely hot day and you are called to a child that has been left in a car while mom went in to get the groceries, what do you do? Immediate acute resuscitation, which should focus on rapid cooling and treatment of the dehydration and/or shock.

Learn more about other common summer-related pediatric emergencies here.

Ann Dietrich, MD, FAAP, FACEP
Medical Director
Franklin County Firefighters - Grant Medical Center EMS Education

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INFO?

Please visit us at OhioHealthEMS.com for the latest information and any additional content or photos from this newsletter's articles!

Director's Corner

Thank you for another successful Ohio EMS Conference! The support and participation to make this conference outstanding was greatly appreciated. Attendance was record breaking again this year with more than 1,700 attendees. We ask that you mark your calendars for the 12th Annual Ohio EMS Conference, which will be held May 20–21, 2019 at the Columbus Greater Convention Center.

Highlights from this year's conference include, EMT and paramedic alumni breakfast, opening ceremonies, and our first keynote speaker, Scott Daly. Our eight breakout tracks were well attended and offered a variety of educational topics, including EMS educators, EMS operations, community paramedicine as well as pediatric emergency coordinator and rural trauma team development courses. The convention center was bursting at the seams with exhibitors, food and interactive simulation areas. What a great time to network, learn and celebrate EMS week!

We at OhioHealth are honored to share the celebration of EMS week with so many of our EMS colleagues. Many thanks for setting aside time to attend our conference each year!

Holly Herron, DNP, RN, CNP, CCRN, CEN, Paramedic
System Director
OhioHealth EMS

Fast Facts

- + Drowning is the second most common unintentional injury for ages 1–4 and 15–19
- + Most drownings occur in the bathtub for infants younger than one year old
- + For children 1–4 years old, most drownings occur in private pools
- + For those older than 15, the drowning location most commonly includes a natural water setting
- + Males have twice the rate of non-fatal drownings and five times the rate of fatal drownings as females
- + More than half of adolescent and adult drownings involve alcohol or substance use
- + On average, up to 80 percent of fatal drownings are preventable