THE SULLIVAN GROUP

TSG PEDS EM NEWS

SAVING LIVES - REDUCING RISK

From The Editor

Welcome to the Summer 2012 issue of The Sullivan Group's Peds EM News. Each quarter we try to bring you some interesting topics in Pediatric Emergency Medicine to read, think and talk about to help you and your team take care of the sick or injured Pediatric patient.

This quarter we take a look at "Bath Salts," a class of synthetic drugs that has been making a comeback in the drug scene. We also offer some tips to help you and your team get an "excellent" review from your patients. We'll take another look at Pediatric Submersion injuries, discuss two key terms in Pediatrics - Lethargy and Irritability - and note some quick facts about Summer Enteroviral Infections.

We hope you enjoy this newsletter. Please feel free to provide feedback and/or suggestions for future topics. Thanks, and enjoy.

Dr. Todd Zimmerman

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Bath Salts: A New Presentation Of An Old Drug

by Dr. Todd Zimmerman

Lately we have been hearing quite a bit about the designer drug called "Bath Salts." The following is a review of some of the key points regarding the resurgence of a drug that has been around since the 1960s that was originally used to combat fatigue.

- "Bath Salts" are not actually a bath salt, but they are sold as bath salts. They are also sold as bug repellants, jewelry cleaners and screen cleaners.
- They usually contain one of three active synthetic drugs: MDPV, Mephodrone or Methylone.
- They are also known as: Red Dove, Blue Silk, Zoom, Bloom, Cloud

Nine, Ocean Snow, Lunar Wave, Vanilla Sky, Ivory Wave, White Lightning, Scarface, Purple Wave, Blizzard, Stardust, Lovey Dovey, Snow Leopard, Aura, Hurricane Charlie.

- Until recently, bath salts were a legal stimulant; however, they are already illegal in some states, with more and more states making them illegal.

- These drugs are power stimulants.
- They act as a dopamine/norepi reuptake inhibitor.
- The following psychiatric effects typically last 3-4 hours:
  - Patient may be in a euphoric state.
  - Patient may exhibit increased awareness and alertness.
  - Anxiety, agitation and panic attacks are not uncommon.
  - These drugs have been known to put people into rages with hallucinations.
- The following cardiovascular effects can typically last up to 8 hours:
  - Tachycardia
  - Hypertension
- Other effects:
  - Dilated pupils
  - Sweating
  - Hyperthermia
- Treatment will be mainly supportive with the potential need for activated charcoal (if within 1 hour of ingestion and there is no airway compromise), sedation, hydration, sodium bicarbonate (for severe metabolic acidosis), antiarrhythmics, anticonvulsants (for seizures), vasodilators (for severe refractory hypertension), IV fluids, pressors (for hypotension).
- Testing is available for bath salts. The timeframe for detecting these drugs after ingestion is 48-72 hours.
- It has been reported that these drugs do not typically show up on an ED drug screen. ■

The Top 10 Tips For Getting An "Excellent" Review In The Pediatric ED

1—During your introduction, acknowledge the parent/caretaker and the child by name.

2—Talk to the child; explain what you are doing in easy and understandable terms.

3—Validate the parents'/caretakers' concern for coming in to see you. Make them feel good about having brought their child to the ED.

4—Communicate the reality that many disease processes evolve over time. If that is in fact the case, tell the parents that the good news is there is no clinical evidence that anything worrisome is going

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Pediatric Submersion Quick Facts

The following list is a brief synopsis of a *WebMD* article entitled "Near Drowning" by Michael J. Verive, MD. It is a reprint from the *Summer 2011 Peds EM News*. A topic update follows.

Up to 15% considered to be dry submersion injuries, in which little or no water is found in the lungs.

Submersion injuries are the second leading cause of death and disability in children.

Near drowning is defined as survival beyond 24 hours after the submersion, even if death eventually occurs, whereas drowning is defined as death that occurs within 24 hours of the submersion.

Warm Water Drowning: >20ºC, Cold Water Drowning: <20ºC.

Essentially all damage ensues from hypoxemia.

CNS hypoxemia can result in cerebral edema, which can be a late finding.

Cardiovascular injury from hypoxemia and from hypovolemia/hypotension due to increased capillary permeability.

Consider child abuse, neglect, assault and Munchausen Syndrome by Proxy.

Give 100% O2, and if you cannot maintain adequate oxygenation, intubate with use of PEEP.

Even if trivial history, consider minimum of 6-hour observation prior to discharge.

Degree of hypoxemia often under-recognized.

"Bimodal" age distribution has the highest risk: under 4 years of age in pools/baths, and 15-19 years of age in natural bodies of water.

Think of secondary causes of drowning: Trauma, Seizures, Drugs, Syncope.

Can lead to multisystem organ failure, ATN and Rhabdomyolysis.

Remember warming, fluids, O2 sat monitoring.

Pulmonary effects can result from alveoli damage, impaired gas exchange, late pneumonia.

Corticosteroids have little or no benefit.

Antibiotics only if submersion in sewer or contaminated water.

Prognosis directly related to duration and degree of hypoxia.

Remember the potential for cervical spine injuries.

on at the moment (snapshot in time) that you are seeing their child.

5 — Stress to the parents the importance of following up with their primary care doctor.

6 — Parents always enjoy hearing something positive about their child; for example: he's really cute; she's so well behaved; she speaks so well for a 3-year-old; etc.

7 — Have a good "poker face." Do not let the parents see that you may be frustrated with a busy shift. Make sure they feel that you know their child is equally as important as every other child in the ED.

8 — Communicate that you are putting up the side rails for their child's safety.

9 — Communicate that you are shutting the curtains for their child's privacy.

10 — Thank them for allowing you to help take care of their child. ■

Pediatric Submersion Topic Update (Looking Well Does Not = Discharge Home)

Summer is finally here. With the hotter temperatures, more people head to the beach, the local pool, etc. Unfortunately, even with safeguards in place, many children end up in the ED with a submersion injury/near drowning episode. These children often look well when we see them in the ED; this should give some comfort in that the child is not actively crashing in front of you. But in no way, shape or form should this be a ticket for a discharge home.

One of the many potential complications of a near drowning is a later onset of Cerebral Edema. Cerebral Edema can occur even more than 24 hours after the submersion; and, as noted, it would not be uncommon for the child to appear at least relatively well in the ED at first, as the edema may take time to develop after the initial hypoxic injury.

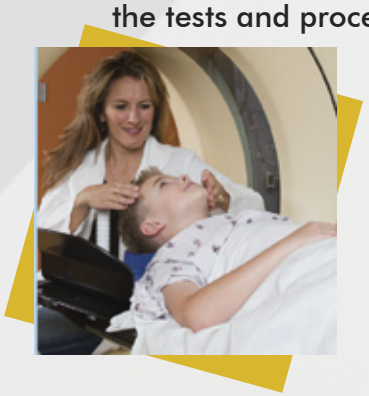
Therefore, the take-home message here is to have an extremely low threshold for admission to a PICU after a child has a near drowning episode. Every case should be looked at individually, and early consultation with a Pediatric Intensivist is always the prudent way to go when dealing with any child that has a near drowning episode. ■

Cerebral Edema can occur even more than 24 hours after the submersion.

Lethargy And Irritability In A Child? What's The Fuss?

by Dr. Todd Zimmerman

When a physician practices "medical-legal medicine," he or she orders a multitude of tests and procedures to rule out a diagnosis for which there is no clinical evidence. Since the tests and procedures are not indicated, these physicians are potentially exposing their patients to unnecessary complications leading to longer time spent in the ED, more pain, and possible exposure to radiation from CT scans and X-rays.



Practicing medical-legal medicine is not recommended. Utilizing sound medical-legal documentation, however, is recommended. Sound medical-legal documentation is when the physician assures that all aspects of the medical record are completed and the chart is addressed and documented in a fashion that shows a thorough thought process. From an overall medical-legal standpoint, it is critical that you have a very clear understanding as to what the words "lethargic" and "irritable" mean when working with pediatric patients.

Let's take a look at the word "lethargy" or "lethargic."

It is common for parents or caretakers to feel that their child is acting lethargic if the child is not as active or playful as usual or is just sitting around all day watching TV. According to *Stedman's Medical Dictionary*, 25th Edition, lethargy is: "A state of deep and prolonged unconsciousness from which one can be aroused but into which one immediately relapses."

So what do you do when parents are reporting to you that their child is lethargic, but the child is running around the room playing or the child looks well and is just not as active and playful as normal? There are three options when parents/caretakers report to you that their child is lethargic:

1 —You order a battery of tests and procedures to find the cause of the child's lethargy.

2 — You see that the child is not lethargic, so you disregard what the parents/caregivers said and the fact that the RN documented lethargy in the medical record, and you decide that the child is not lethargic.

3 — You have a clear discussion with the parents and also with the RN who documented lethargy.

- You ask the parents if in fact the child was sleeping to the point where he or she could not be aroused, OR if the child is simply less active or sleepier than usual yet is easily aroused and still appearing well.
- You then ask what the RN saw that made him/her document lethargy. Did the RN appreciate lethargy or did the parents report lethargy? And importantly, if it was in fact reported, did the RN QUALIFY it with the parents? You then go back and make a very clear note in the record qualifying the term "lethargy."

Option 3 is obviously the best route for the practitioner to take; it results in an accurate description of the child's condition and is an example of utilizing medical-legal documentation. All too often, the child is in fact NOT lethargic, but simply not as active as usual. A truly lethargic child is a seconds-to-minutes emergency, and your whole staff should be on the same page with this.

Now let's look at the word "irritable." When used in pediatrics, the term "irritability" means that the patient is truly inconsolable, thus implying that meningismus may be present.

Summer Enteroviral Infections

Quick FACTS

By Dr. Todd Zimmerman

This is a brief recap of an article from the *Summer 2011 Peds EM News*.

ED Presentations

Nonspecific Febrile Illness: This is the most common form of enteroviral infection we see. There is a sudden onset of fever with generalized complaints that can be similar to the flu.

Herpangina: This is usually seen in children 3-10 years of age. Patients have fever, sore throat, vesicles or ulceration in the pharynx. They can easily become dehydrated because of the pain in the mouth and their refusal to eat and or drink.

All too often, the child is not actually irritable, but fussy. Parents may think their child is crying more than usual and is therefore irritable. But when you ask further, you find out the patient cried a little today when there was fever, but he is easily consolable and actually played a little throughout the day. You observe the child watching TV, looking up and pointing at the cartoon. He looks at you when called and quickly looks away, unsure and looking at mom for guidance. This is not an irritable child; he may be not be as happy and playful as normal, but he does not look to be in acute distress or discomfort. He cries during the exam and quiets down after mom picks him up; again, this is not an irritable child.

An irritable child is one that needs immediate and emergent attention, as the truly irritable child may have meningitis or another acute life-threatening condition.

In summary, the terms "lethargy" and "irritability" should never be taken lightly in children. In fact, if either of these words are used verbally by the parents or documented in the medical record by any part of the healthcare team, an immediate, clear and concise note that qualifies these terms is a very prudent and necessary course of action. ■

The terms "lethargy" and "irritability" should never be taken lightly.

Hand-Foot-Mouth Disease: Patients will have fever and vesicular-type lesions in the mouth, on the palms and soles, and sometimes on the buttocks.

Aseptic Meningitis: This presents initially as classic febrile illness, and then over a period of days develops the classic signs of meningitis. It can create a clinical conundrum, as it can be mistaken for or confused with meningococcemia because the patient has signs and symptoms of meningitis, including a rash.

Nonspecific Viral Exanthems

Myocarditis/Pericarditis

Sepsis-Like Syndrome

Peds e-Learning Courses
for Healthcare Professionals

- Appendicitis
- Appendicitis in Children
- Case 02: A 15-year-old male with Abdominal Pain
- Case 04: A 14-month-old Febrile Child
- Case 06: A 23-month-old child with a Fever
- Case 13: Pediatric Missed Meningitis
- Cognitive Errors in Medicine Part 1
- Cognitive Errors in Medicine Part 2
- Community-Acquired Methicillin-Resistant Staph Infections (CA-MRSA)
- Head Injury
- Neonatal Emergencies
- Optimizing Communication in the Emergency Department
- Orthopedic Injuries Part 1
- Pediatric Abdominal Emergencies
- Pediatric Infections
- Pediatric Meningitis
- Pediatric Respiratory Emergencies
- Torsion Testicle
- Wound Care

Click on course name to see course description.

How Can The ED Practitioner Get Into Trouble With These Kids?

- By failing to recognize tachycardia out of proportion to the fever. This can be a sign of concurrent myocarditis or pericarditis. Little children may not be able to properly communicate to you verbally that they have chest pain and/or shortness of breath. Tachycardia out of proportion to the fever may be your only clue that your patient has a potentially life-threatening complication of an enteroviral infection.
- By failing to act swiftly if the patient is in fact exhibiting tachycardia out of proportion to the fever. Another thorough examination should be done to determine the accuracy of the child's vital signs; if they are indeed worrisome, you should obtain a stat ECG and consultation with a Pediatric Cardiologist.
- By failing to recognize that neonates with enteroviral infections can present with a sepsis-like syndrome and even shock. These patients have been known to present as if they have complex congenital heart disease, and they may crash quickly.
- By failing to recognize that these children are often dehydrated. Children with Hand-Foot-Mouth Disease often do not want to eat or drink due to the mouth pain. Sometimes the practitioner can be fooled by seeing a good amount of saliva

in the mouth; this is actually secretions remaining in the mouth because the patient does not want to swallow due to the pain from the sores of the virus. This tells us practitioners need to pay close attention to vital signs and look at the patient's mental status and alertness. Also find out if the patient is urinating. Consider checking a BMP or urine dip for ketones, and give pain meds and IVF if deemed necessary.

Practitioners need to pay close attention to vital signs.

- By failing to recognize that it is common for these children to develop viral meningitis/encephalitis from enteroviral infections. Enterovirus is a well known offender when it comes to summer viral meningitis. Remember to document the physical exam well; it should be clear that you considered and looked for meningismus. If an LP is indicated, remember to check the CSF enteroviral PCR. ■

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Thank you

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