



Clinical Pearls

A Scary Fall: Understanding Sarah's Concussion

Four-year-old Sarah was enjoying a meal out with her family when an unexpected accident happened. As she attempted to climb out of her highchair, she lost her balance and fell 4 feet, striking her head. Although she did not lose consciousness, she cried intensely afterward and experienced a vomiting episode—two signs that concerned her parents enough to bring her to the emergency department.

In the Emergency Department (ED), Sarah remained inconsolable. Based on her symptoms and using the PECARN criteria (a clinical decision tool that helps determine when a child needs imaging after a head injury) the physician ordered a CT scan to rule out serious internal injury. While being transported to the CT scanner, Sarah's condition changed. She became less responsive and began having episodes of apnea, meaning she briefly stopped breathing. To protect her airway and ensure she received adequate oxygen, the medical team decided to intubate her. She was then transferred to the Pediatric Intensive Care Unit (PICU) for close monitoring.

What Happened?

The questions on everyone's mind were:
Was there a skull fracture? A brain bleed? Or a severe concussion?

Surprisingly—and thankfully—Sarah's head CT scan came back completely normal. There was no sign of structural injury. After about 12 hours of rest and monitoring in the PICU, she began to wake up and steadily regained her normal consciousness. She was safely extubated and continued to improve. By the next day, Sarah was well enough to go home with a referral to a concussion clinic for follow-up care.

Final Diagnosis: Concussion

Even without visible injury on a CT scan, a concussion can still be significant. It is a functional brain injury, meaning it affects how the brain works, not its physical structure. Sarah's symptoms—including vomiting, irritability, decreased responsiveness, and apnea—were consistent with a severe concussion, but not with bleeding or fracture.

With rest, monitoring, and follow up, most children recover fully. Thanks to her parents' quick action and the medical team's timely care, Sarah is expected to make a complete recovery.

Believe it or not, there is no single consensus definition of concussion. Anyone with loss of consciousness, confusion, severe headache, nausea, blurred vision, amnesia, balance problems, irritability, fatigue, sleep disturbances (too much or too little), or emotional lability has had a concussion. Symptoms are usually present immediately, but can sometimes be delayed up to 72 hours.

Learn more on the next page...

Pediatric Concussion Statistics

Understanding how common concussions are in children helps put Sarah's experience into perspective. Recent national data highlights just how frequently these injuries occur:

- Concussions are widespread among children and teens. In 2022, an estimated 2.3 million U.S. children aged 17 or younger—about 3.2% of that age group—had ever been diagnosed with a concussion or brain injury. Rates increase with age. Only 1.0% of children aged 0–5 had ever been diagnosed, but this rose to 2.3% for ages 6–11 and 5.9% for ages 12–17.
- Boys experience concussions more often than girls, with rates of 3.7% vs. 2.6% overall. This pattern is especially notable in older children and teens.
- Sports and recreational activities are a major contributor: About 70% of all emergency department visits for sports and recreation related traumatic brain injuries (TBIs) involve children 17 and under.
- Among these injuries, contact sports account for 45% of emergency visits—especially football, basketball, and soccer.
- A national concussion surveillance study found that 6.9% of children aged 5–17 sustained at least one sport or recreation-related TBI in a 12 month period, and 3.3% sustained a “probable” TBI as defined by CDC criteria.
- Notably, symptoms from these injuries often persist: 18.1% of children in the study continued to have symptoms lasting eight or more days after their concussion.
- The vast majority of concussions do not require CT scans or imaging, and those patients are discharged from the ED with thorough instructions for parents.

If you'll allow a bad analogy; you wouldn't run sprints or marathons immediately after injuring your knee. You would take it easy, rest, then walk, jog, run. If you started to jog and your knee was hurting, then you would go back to the previous step. For concussions, the biggest stress on the brain immediately after the injury is screen-time or reading. The intense focus of the eyes puts a lot stress on the brain and can the patient's symptoms worse. After a concussion, patients should avoid all screen time and reading for 48 hours, then gradually add them back in. Just like the jogging example, if the symptoms return after minimal reading or screen time, then it should be scaled back.

One of the common myths about concussions is that the patient needs to be awakened from sleep every hour throughout the night. This is not an evidence based practice and may exacerbate symptoms because the brain needs rest. Parents should be reassured that 80% of concussions are resolved completely within 2 weeks. If patients have symptoms lasting longer than 2 weeks, then their pediatrician can prescribe neuro-cognitive rehab.

[Click the link below to access the PECARN Pediatric Head Injury/Trauma Algorithm:](#)



[PECARN Pediatric Head Injury/Trauma Algorithm Calculator](#)

References:

[QuickStats: Percentage of Children and Adolescents Aged ≤17 Years Who Had Ever Received a Diagnosis of Concussion or Brain Injury, by Sex and Age Group — National Health Interview Survey, United States, 2022 | MMWR](#)
[Data on Sports and Recreation Activities | HEADS UP | CDC](#)
[Sport and Recreation Related Concussion in Children: National Concussion Surveillance System - American Journal of Preventive Medicine](#)

This featured piece was provided by David Eclaircy, EMSC Family Advisory Network (FAN) Representative with contributions by the EMSC Advisory Committee ED Physician, Dr. Justin Sempsrott.



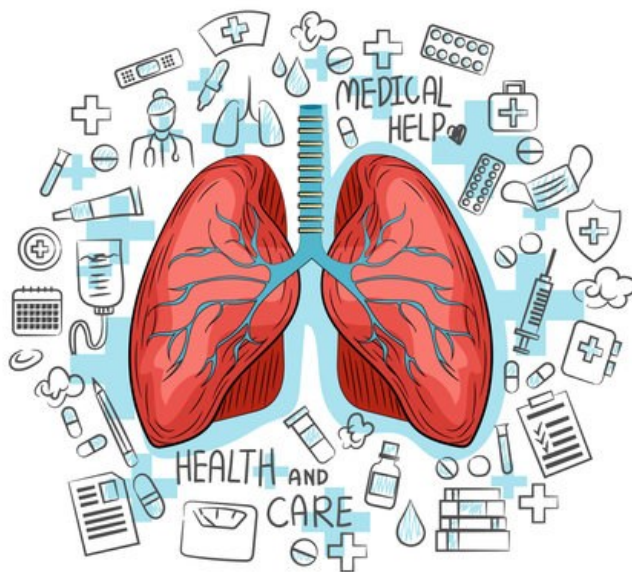
Let's All Breathe A Little Easier!

Check out the EHC Pediatric Education and Advocacy Kit (PEAK) on Asthma!

This education is evidence-based and supports both ED and EMS clinicians. Learn more about this common chronic disease for children and how you can care for these patients. You will breathe easier after learning how to help them breathe easier!

Click the link below:

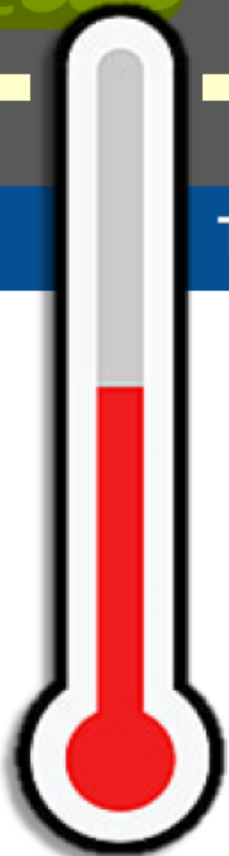
 [Pediatric Education and Advocacy Kit \(PEAK\): Asthma - Search • EIC](#)



LOOK BEFORE YOU LEAVE



TEMPERATURES RISE FAST IN CARS



OUTSIDE



INSIDE VEHICLE AFTER...



10
MINUTES



30
MINUTES



70° F	→	89° F	→	104° F
80° F	→	99° F	→	114° F
90° F	→	109° F	→	124° F
100° F	→	119° F	→	134° F



CALL 911 FOR EMERGENCIES

MEET the PECC



Meet Emily Zundel, RN, BSN, who is the Pediatric Emergency Care Coordinator for Idaho Falls Community Hospital!

Here is a little more about Emily...

I have always had a passion for children and have always wanted to have a position that I could try and make a difference. When I graduated nursing school I knew I wanted to be able to work with children, but I also love everything about the ER. It worked hand in hand that it allowed me to help pediatric patients, but also do emergency medicine.

I have two kids of my own, a son and a daughter. My family is everything to me. We love to paddle board, BBQ delicious food and there's not much better than reading a book in a hammock with the sun keeping you warm! I also have 3 dogs, 2 Dachshunds and a miniature Australian Shepherd/Pomeranian mix. I love the beach and hope one day to live back along the coast with my family nearby!

Become a Pediatric Emergency Care Coordinator!

WHAT IS A PECC?

A pediatric emergency care coordinator (PECC) is an individual who advocates for their EMS agency or Hospital ED to improve pediatric emergency care

Who Can be a PECC?

- An individual affiliated with an EMS agency or Hospital ED
- Interact directly with agency or ED staff
- Passion for pediatric care

RESPONSIBILITIES:

- Serve as the point of contact for EMSC
- Share pediatric education and training opportunities with staff
- Help coordinate pediatric trainings
- Be a champion for pediatrics

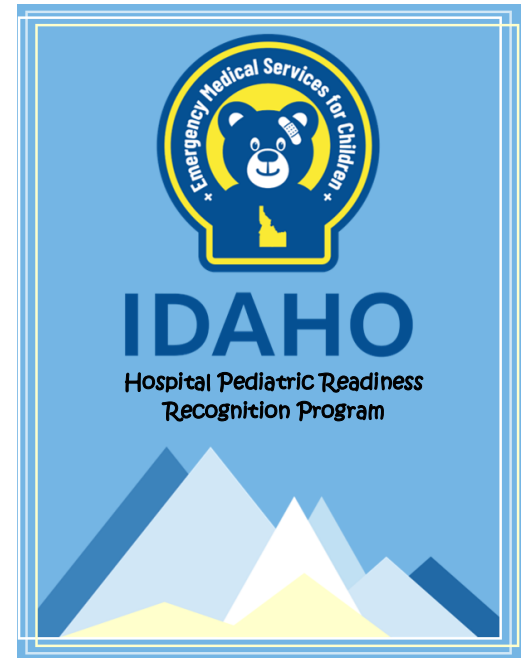
Is Your ED Recognized?

Join the 7 hospital EDs who've already been recognized and apply to become "Pediatric Ready" through the Idaho Hospital Pediatric Readiness Recognition Program!

Why is it important to be recognized as Pediatric Ready?

Adhering to national guidelines for pediatric emergency care, known as being "pediatric ready," is associated with improved survival.

Research has found that if all EDs in the United States became pediatric ready, it could save at least 2,100 lives a year!



- Free and voluntary for hospital EDs
- Three levels to apply for: **Capable**, **Advanced**, and **Expert**
- Includes an easy onsite review
- Onsite review can be combined with another TSE survey (Trauma, Stroke, or STEMI)
- Recognition lasts for 3 years!

Applications are available on the EMSC website!

Contact Stacy Rodgers with any questions:

Stacy.Rodgers@dhw.idaho.gov

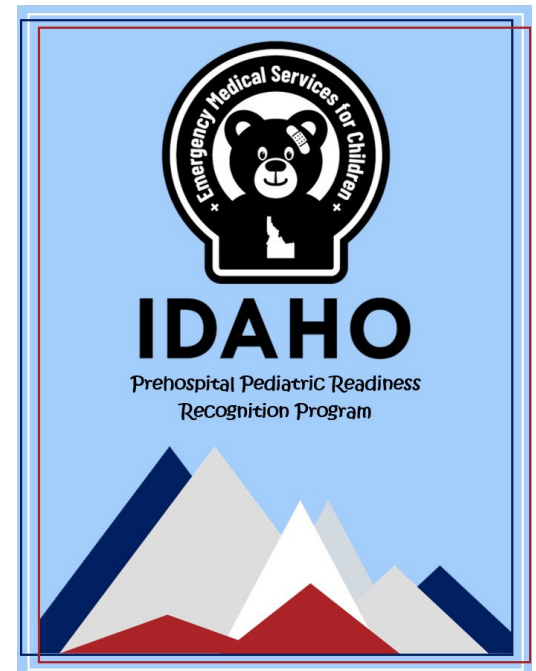


Is your EMS Agency Pediatric Ready?

The Idaho Prehospital Pediatric Readiness Recognition Program has launched! Encourage your agency to become Pediatric Ready and apply today!

Why is it important for agencies to be recognized as “Pediatric Ready”?

- Pediatric incidents account for approximately 10% of all prehospital calls
 - Children have unique characteristics that require special care
 - Lower frequency of pediatric interactions may result in providers being less familiar and feeling less confident with this small population
 - Being pediatric ready can reduce responder anxiety and improve patient care!
-
- Free and voluntary for EMS Agencies
 - One level to apply for: **Pediatric Ready EMS Agency**
 - Includes an easy onsite review
 - Recognition lasts for 3 years!



Applications are available on the EMSC website!

Contact Stacy Rodgers with any questions:

Stacy.Rodgers@dhw.idaho.gov



Check Us Out!



Scan the QR code
to visit the EMSC
website!



SCAN ME

Follow TSE and EMSC
on Facebook!



Click the link below:

[Idaho Time Sensitive Emergency | Facebook](#)



**IDAHO TIME SENSITIVE
EMERGENCY SYSTEM**
TRAUMA | STROKE | STEMI

Give Someone a Shout Out!

Tell us about a team member who made a
difference for a child, and we'll celebrate
them in a future issue!

Reach out to Stacy Rodgers with at:

Stacy.Rodgers@dhw.idaho.gov



IDAHO
EMSC State Partnership Program

FAN-tastic TIP!

It is easy to forget that medication safety is just as important as injury prevention. Resistant closure caps are designed to keep children out of harmful medicine. Though, children can still figure out a way to get into things due to their natural, determined, and curious minds, so here are a few tips, as an added preventive, to keep children safe around medicine:

- **Out of sight, out of mind.** Always keep ALL medicine, including medication taken every day, put away in hard-to-reach places.
- **Mindful places.** If medicine is going to be kept in purses and bags, ensure these items are also out of reach and sight.
- **Safe products can also be harmful.** Vitamins, creams, and other health products should also be put away where children can't see or reach them.
- **Safe medicine dosing.** Follow the medicine instructions carefully, only use the dosing device provided, create a schedule, and communicate clearly with other caregivers.
- **Educate, Educate, Educate.** Share medicine safety with your family, friends, and babysitters. Ensure they know the **Poison Help number 1-800-222-1222** and it's posted visibly at home.

➡ For more interesting facts and data on medication safety, read the 2018 report :

[Safe Medicine Storage: Recent Trends and Insights for Families and Health Educators.](#)

➡ Resource: [Medication Safety](#) | [Safe Kids Worldwide](#)

Provided by M.R. Kautz, Family Advisory Network (FAN) Representative