



Lucile Packard
Children's Hospital
Stanford

Stanford Children's Health Hospital Outreach Program (HOP)



Child Life and the Stanford Pediatric Emergency Department

Pediatrics, the official journal of the American Academy of Pediatrics, writes, “Child life programs are an important component of pediatric hospital-based care; they address the psychosocial concerns that accompany hospitalization and other health care experiences. Child life specialists focus on the optimal development and well-being of infants, children, adolescents, and young adults while promoting coping skills and minimizing the adverse effects of hospitalization, health care encounters, and/or other potentially stressful experiences. In collaboration with the entire health care team and family, child life specialists provide interventions that include therapeutic play, expressive modalities, and psychological preparation to facilitate coping and normalization at times and under circumstances that might otherwise prove overwhelming for the child. Play and developmentally appropriate communication are used to (1) promote optimal development, (2) educate

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children and families about health conditions, (3) prepare children and partner with families for medical events or procedures, (4) plan and rehearse useful coping and pain-management strategies with patients and families, (5) help children work through feelings about past or impending experiences, and (6) partner with families to establish therapeutic relationships between patients, siblings, and caregivers. Child life specialists collaborate with the entire interdisciplinary team to promote coping and enhance the overall health care experience for patients and families.”

At Lucile Packard Children’s Hospital Stanford and the Stanford Pediatric Emergency Department, child life services are available seven days a week, including holidays. We have 40 child life specialists to split between inpatient units, such as cardiac, hematology/ oncology, general pediatrics, and PICU, and outpatient units, such as radiology, surgery, emergency department, and outpatient clinics.

For more information about Packard Children’s Hospital’s child life team, please **visit our website**, or **check out this video**.



Pediatric Ingestions: How to React?

In the United States, nearly 70,000 children visit the emergency department per year due to accidental poisonings. Poisoning may be intentional or unintentional. Unintentional poisonings make up 80%–85%, or most, of all poisoning exposures in children. Intentional poisoning is usually seen in adolescents and young adults, and it comprises about 10%–15%. More than one half of poisoning exposures involving teenagers are intentional (62% in 2019). Several household products may cause significant toxicity, morbidity, and mortality in young children. These products include alcohols, button batteries, corrosive cleaning products, laundry detergent pods, hydrocarbons, and magnets. (O'Donnell, K. 2017)

Parents and health care providers encountering a child with a known or suspected ingestion should contact the Poison Control Center (PCC). This 24-hour hotline (800-222-1222) is staffed by toxicologists who provide expert medical advice to parents regarding whether the ingestion necessitates immediate medical assessment. The PCC will also assist physicians in the initial evaluation and management of an ingestion and provide recommendations about appropriate disposition. (Mangus, C., and Canares, T. 2018)

1. Resuscitation

- Assess airway and intubate if needed.
- Assess breathing and maintain oxygenation/ventilation.
- Give naloxone for respiratory depression due to suspected opiate intoxication.
- Assess circulation and maintain cardiopulmonary monitoring. Fluid resuscitate with crystalloid if in shock.

- Assess disability (i.e., mental status, seizures). Check for hypoglycemia. For patients with dermal exposures, remove clothing and store in a plastic bag.
- Assess environment for signs of possible child abuse, suicidal attempt, or substance abuse.

2. Clinical evaluation (history/physical exam) to determine likely substance/substance class

- Vital signs: Can help differentiate sympathomimetic effects from ingestions with respiratory and myocardial depressive effects.
- Level of consciousness: Lethargy, agitation, hallucinations.
- Eyes: Miosis, mydriasis, nystagmus.
- Skin: Color; presence of diaphoresis, dry skin, or piloerection.
- Oral: Moist/dry mucous membranes.
- Abdomen: Hyper- or hypoactive bowel sounds, bladder size (urinary retention).
- Neurological: Hypo- or hyperreflexia, seizures.

3. Testing

- Screen for acetaminophen, salicylates, and pregnancy in all ingestions.
- Obtain CBC, BMP, blood gas, bedside blood glucose, and specific drug levels as indicated.
- Electrocardiogram (ECG): Specific findings in the QRS and QT intervals, terminal R waves in AVR, and dysrhythmias can be helpful in diagnosis and management of an ingestion.
- Basic laboratory can be useful in identifying toxin because it may cause a characteristic abnormality. Patients with anion gap metabolic

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acidosis or an osmolar gap have a common differential diagnosis that should be evaluated as part of the workup. (Reyes, L. 2021)

- CXR: For respiratory depression (e.g., aspiration pneumonitis, pulmonary edema).
- AXR: For suspected ingestion of iron, enteric coated preparations, or heavy metal.
- Urinary toxicology screen: Generally is not helpful in the initial management of patients, is not standardized between institutions,

and be aware that synthetic opioids (e.g., fentanyl) do not show up on some tests.

4. Treatment

- Administer specific antidotes as indicated.
- Consider toxin elimination techniques.
- Supportive care. (Reyes, L. 2021)

Please contact Melanie Stroud, RN, Hospital Outreach program director, and Andy Wen, MD, director of Regional Critical Care Services, with any questions at outreach@stanfordchildrens.org.

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Foreign Body Aspiration in Children —When to Call ENT?

Eighty percent of foreign body aspirations (FBA) in children occur in those younger than 3 years old, with the peak incidence between 1 and 2 years old. Toddlers are increasingly independent, love to explore, but are still a bit uncoordinated. They often have older siblings who like to help find things to swallow. Younger children are at risk for FBA because of their small-diameter airway.

If a child has two of the following, an airway evaluation in the operating room is indicated:

1. **Clinical history** of witnessed aspiration or symptoms such as coughing or turning blue.
2. **Radiographic abnormalities** on either plain chest radiograph or inspiratory/expiratory phase films. Most food and plastic will not appear on plain films.
3. **Physical exam findings** such as asymmetric lung sounds, stridor, wheezing, drooling, or increased work of breathing.

If any one of the above is highly suspicious, such as this chest film, airway evaluation is warranted.

The Pediatric Otolaryngology Division at Lucile Packard Children's Hospital Stanford is here for you.



From FBA to ear infections, our nine faculty and three APPs provide specialized coverage. Practitioners requesting same-day or next-day appointments can call the ENT attending on call via the Packard Children's Hospital operator at **(650) 497-8000** for a direct referral. Our group also supports telehealth consults, including evening and weekend appointments.

For more information, please contact Kara D. Meister, MD, Clinical Assistant Professor, Stanford Children's Health **Aerodigestive and Airway Reconstruction Center**, at meister4@stanford.edu.

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Packard Children's Is New Home to American Heart Association Hands-Only CPR Training Kiosk'

We recently received a Hands-Only CPR training kiosk to teach CPR basics to patients and visitors. The kiosk is funded by the Harriman family of Saratoga and was donated to the hospital by the **American Heart Association**.

Providing access to the Hands-Only CPR training kiosk in our hospital is meant to help expand awareness and provide practice of this valuable lifesaving skill that can make a difference in saving the lives of Bay Area residents and beyond.

According to the American Heart Association, each year more than 350,000 cardiac arrests occur outside a hospital, about 20% of them in public places. CPR, especially if performed immediately, can double or even triple the victim's chance of survival. Yet less than half of out-of-hospital cardiac arrest victims receive CPR from a bystander.

The kiosk has a touch screen with a short video that provides an overview of Hands-Only CPR, followed by a practice session and a 30-second test. With the help of a practice mannequin, or a rubber torso, the kiosk gives feedback about the depth and rate of compressions, as well as proper hand placement—factors that influence the effectiveness of CPR. Kiosk visitors can select to do the training in English or Spanish. The training also has closed captioning to make the instruction available to everyone.

The kiosk will be maintained in accordance with current health standards, and there is a freestanding dispenser of wipes installed next to the kiosk so that each user can wipe it down before and after using it, as instructed.

Every second counts when a person suffers a cardiac arrest, which is why bystander CPR must start immediately until professional help arrives. But bystanders may be reluctant to perform CPR because of lack of training or fear. The kiosks will help the public acquire a comfort level with performing chest compressions without the stress of an actual medical emergency, so they'll feel empowered to spring into action if they witness a cardiac emergency.

The Hands-Only CPR training kiosk is located on the first floor of the Main building, across from the Harvest Café. There are 45 kiosks across the United States, with 10 kiosks located in California. More than 300,330 people have been trained across all the kiosks.

For more information, please email Lynda Knight, MSN, RN, program director of the Revive Initiative for Resuscitation Excellence at Stanford Children's Health, at LyKnight@stanfordchildrens.org.



Traumatic Brain Injury Resources

With summer coming, this edition of the newsletter includes our Pediatric Neurocritical Care Protocol for Traumatic Brain Injury (TBI), as well as a TBI Tip Sheet to assist your team in the initial stages of stabilization of pediatric TBI patients. The complete protocol is provided for reference, but it is designed specifically for the Pediatric Intensive Care Unit and should be used only to guide interventions appropriate to your clinical setting. Tiers 1 and 2 will typically be most relevant to initial ED management, including important

basics to keep in mind, such as normothermia, normoglycemia, and normotension. Subsequent injury-directed management advice can be provided during the transport call. For faster and easier reference, we have developed a TBI Tip Sheet for initial considerations and management.

For nonurgent questions regarding either the tip sheet or the protocol, please contact the Pediatric Neurocritical Care Team at PNCCProviders@stanfordchildrens.org.



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Traumatic Brain Injury Tip Sheet

5 Things You Can Do in the First Minutes of TBI

- Raise the head of the bed above 30 degrees.
- Place child in a C-collar (*assure it isn't too tight and neck is midline*).
- Prevent hypotension.
- Check a sodium level (*avoid hyponatremia*).
- Check a blood gas (*avoid hypercarbia*).

Consider TBI in Infants and Young Children With:

- Cardiac arrest of unknown etiology.
- Apnea of unknown etiology.
- New-onset seizures.

Call Packard Children's Transfer Center—We're Here to Help!

Pediatric neurosurgeons and intensivists who can give advice and expedite transfer to our Neuro-ICU.

TBI tip sheet

Pathways never replace or supersede physician or advanced practice provider orders. Neither Stanford Children's Health, the pathway authors, nor any other involved parties, can guarantee pathway content is entirely accurate and complete. They are not responsible for any errors or undesirable outcomes which may occur from the use of a pathway. [Click here](#) for our full medicolegal statement.

ICP Management Guideline

INCLUSION CRITERIA

- Pupils: dilated and non-reactive pupils or asymmetric pupils
 - Obtain pupillometer from 4th floor PICU, confirm NPI <3, continue with q1 hr pupillometry checks
- Motor exam that demonstrates extensor posturing or no response to sustained noxious stimuli
- Progressive decline in neurologic condition (decrease in GCS >2 points)
- Cushing's response (hypertension, bradycardia, irregular respirations)
- Initial head CT concerning for elevated ICP (i.e. diffuse edema, effacement of basal cisterns and/or gyri and sulci)

TIER 0 ^(4,8)

Consult to Neurology and Neurosurgery

ABCs, avoid hypotension and hypoxia

PaCO₂ goal 35–40, SpO₂ goal >94%

HOB elevated >30 degrees, position head midline

Ensure C collar is not too tight

Targeted Temperature Management (35.5–37.5C) ⁽³⁾

***Absolutely MUST avoid fever! **Arctic Sun at 37C if necessary**

Euvolemia (use NS fluids, add D5 to maintain normoglycemia) ⁽⁹⁾

Avoid hypotension—if EVD in place, titrate MAPs to CPP target*

Normonatremia (135–145 mEq/L)

Normoglycemia (120–180)

Minimize stimulation (e.g. suctioning), provide adequate sedation/analgesia

*age specific **CPP target** if EVD in place: ⁽¹⁾

- **Adults: >50–60 mmHg**
- **6–17 years: >50 mmHg**
- **0–5 years: >40 mmHg**

In TBI, consider seizure prophylaxis with Keppra for 7 days

If ICP monitor in place and ICP >20 sustained for over 5 minutes

TIER 1

Hyperosmolar therapy:

- Hypertonic saline with Na goal of 150–155 mEq/L ⁽⁶⁾
 - Bolus 3–5cc/kg of 3% HTS (rapid push)
 - If central line available, consider Bolus 0.25–0.5 cc/kg of 23% HTS if refractory (max 30cc) as slow push over 5 min ⁽⁵⁾
- Mannitol 0.5–1g/kg bolus (*caution use if hypotensive*)

Optimize sedation

If EVD in place, drain 5–10cc of CSF for acute rises in ICP

Consider brief (<30min) hyperventilation (PaCO₂ 30–35 mmHg)

TIER 2

Increase Na target goals (155–170 mEq/L)

- 3% HTS infusion (starting at 5–30 cc/hr). Titrate to Na goals

Optimize sedation

- Consider propofol—monitor for *propofol-related infusion syndrome, metabolic acidosis*

Consider neuromuscular blockade (titrate to train of fours)

TIER 3: Salvage therapies with limited evidence

Pentobarbital infusion for 24–96 hours ⁽⁷⁾

- Requires cEEG
- Titrate pentobarbital to EEG burst suppression in discussion with Neurology

Targeted Temperature Management (32–34C)

Decompressive craniotomy in discussion with NSGY

Consult NSGY for placement of ICP monitor (EVD or bolt)

Indications for Invasive ICP Monitoring in Children ⁽²⁾

1. GCS 3–8 and an abnormal CT scan
2. Consider in GCS 9–15 with a CT scan that shows:
 - a. Mass lesion
 - b. Effaced cisterns
 - c. Midline shift >5mm
3. Post craniotomy

General Indications for Surgery Criteria

1. Extra-axial mass lesion >1 cm thick
2. Midline shift >5 mm
3. Intracranial hemorrhage (ICH) >20 cc
4. Midline shift <5 mm but ICP >20 mmHg
5. Penetrating injury
6. Compound depressed skull fracture
7. Intracranial Hypertension refractory to medical management

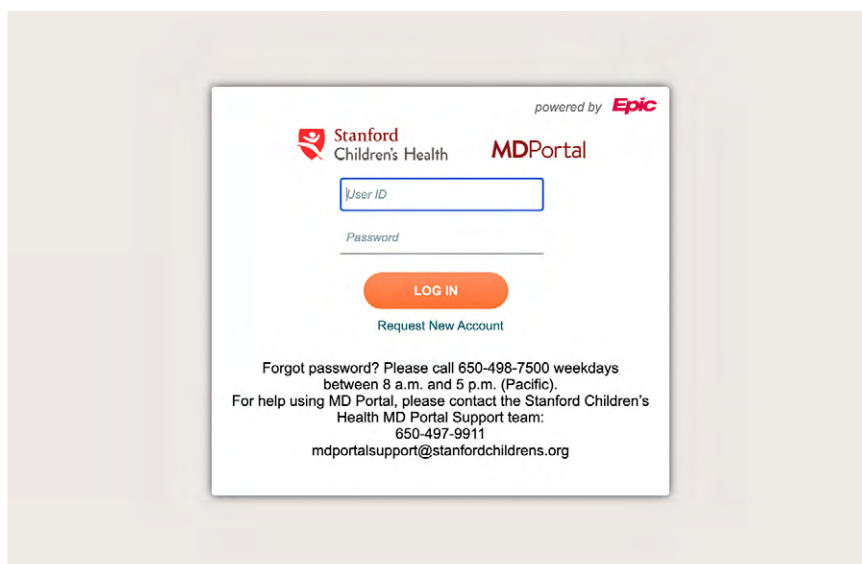
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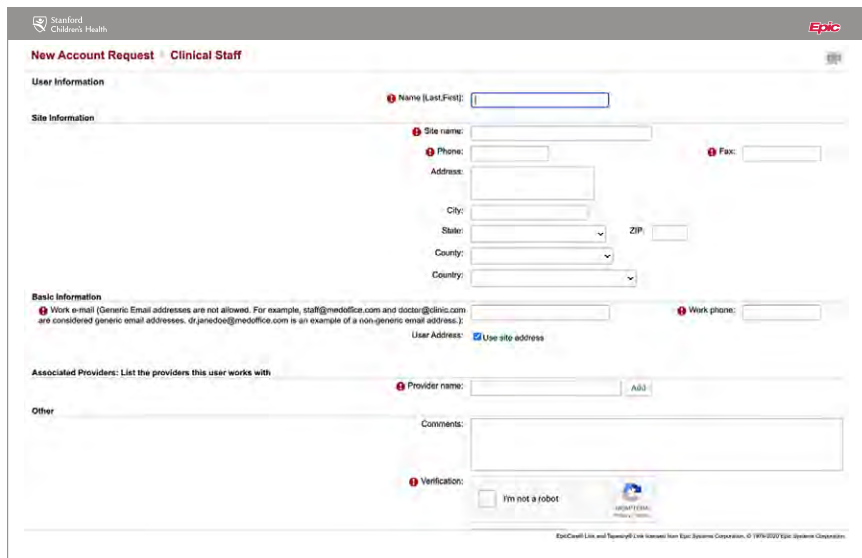
Register for MDPortal

Follow your patient's progress online using MDPortal. Please visit mdportal.stanfordchildrens.org to request an account. You do not need to use Epic to access the portal.

If you have any questions or are having difficulty registering, please call (650) 497-9911 or email mdportalsupport@stanfordchildrens.org.



MDPortal login page



New account request page



Inpatient Consults and Transfers

The Transfer Center at Lucile Packard Children's Hospital Stanford is standing by to help with inpatient consultations and interfacility transfers. Our team of transfer center specialists are available 24/7 to assist in coordinating neonatal, pediatric, and obstetrical transfers, as well as inpatient consultation needs.

To initiate a patient transfer and/or to consult with a Packard Children's specialist, please call (650) 723-7342.

Please have the following information available with the initial request:

- Patient's name and location
- Date of birth
- Chief complaint or diagnosis
- Referring physician's full name and best contact number
- Face sheet ready and available for faxing upon request to (650) 498-6229

Questions or concerns about the Lucile Packard Children's Hospital Stanford Transfer Center? Please contact:

Kat Cueto, MSN, RN-BC, CNS
Director of Clinical Access
(650) 721-5770
kcueto@stanfordchildrens.org

For questions or concerns related to our COVID-19 plan, please see our web page. Information is updated daily and includes content for families and providers. [Covid.stanfordchildrens.org](https://www.stanfordchildrens.org/covid)