LIVE HYBRID ACTIVITY

39th Annual

Community and School Health Pediatric Conference

with Telephone Triage

June 12-13, 2025

In-person conference with a virtual attendance option

Children's Hospital Colorado
Medical Conference and Education Center 2nd Floor | Mts. Yale and Princeton
13123 East 16th Avenue, Aurora, CO 80045

Provided by

Children's Hospital Colorado Division of Patient Care Services
and Division of Community Health and Advocacy

Children's Hospital Colorado

39th Annual Community and School Health Pediatric Conference

with Telephone Triage

Overview, Target Audience, and Learner Outcomes

Our nation continues to face increasingly complex issues that are impacting the health and well-being of children and families. It is essential that healthcare providers are aware of the latest research and evidence-based practice to provide optimal care. This conference will emphasize an integrated approach to care among family, community, and healthcare teams through case-based presentations and thought-provoking discussions.

Target audience includes pediatric nurses, advanced practice providers, therapists, social workers, mental health counselors, care coordinators, case managers, childcare providers, teachers, and others assisting children and their families with healthcare needs in hospital, ambulatory, telephone triage, community health, public health, school, childcare, and home settings.

At the end of this program, participants will report increased knowledge of current pediatric and community health challenges, guidelines, and evidence-based practices. Participants will report at least one practice change they intend to make because of this education.

Agenda

Thursday, June 12, 2025

7:15 a.m. Check in and light breakfast

7:45 Welcome

8:00 **ADHD Considerations for School and Community Nurses**
Mandy Allison, MAEd, MD, MSPH

9:00 **Is your school prepared for a cardiac emergency?**
Courtney White, MS

10:00 Break

10:15 **The Unique Role of the Hospital Educator and Liaison**
Jodi C. Krause, M.Ed, CBIS
Cheri Hall, Ed.S.
Jennifer Harris, MSE
Mattison Lord
Rikka Peaslee, BA

11:15 **Levels of Independence in Diabetes Self-Care**
Stephanie De Jesus Ayala, MS
Lauren Gulley, PhD, MA, BA
Jennifer Whitmarsh, BSN, RN, CECES

12:15 p.m. Lunch - provided

1:00 **Common Skin Conditions and Rashes in Community Settings**
Grant R. Plost, MD

2:00 **Mental Health Trauma and De-escalation**
Lauren Pryce McCarthy, PhD, LCSW

3:00 Break

3:15 **Call Center Triage**
Gina Edwards, MSN, FNP-C
Julie Klingel, BSN, RN, CPN
Erin Prucha, BSN, RN, CPN

4:15 Concluding Remarks and Online Evaluation

4:30 Adjourn

Friday, June 13, 2025

7:15 a.m. Check in and light breakfast

7:30 Welcome

7:45 **Tracheostomy Care: It Takes a Team and Tracheostomy Complications**
Jessica Dawson, MS, RN, CPN, ACM-RN

8:30 **Tracheostomy Care: Care Coordination and Delegation**
Erin Bluth, BSN, RN, NCSN

8:50 **Catheterizing in the School Setting**
Marguerite Korber, CPNP

9:20 **The ABC's of Gastrostomies**
Catherine Doernbrack, MSN, RN, CPNP

9:50 Break

Virtual Session Ends

10:00 **Skill Stations**
Tracheostomy Changes
Suctioning
Emergency Ventilation

11:15 **Skill Stations**
Clean Intermittent Catheterization
Gastrostomy Tube Feeding, Site Care, and Stoma Preservation
Mental Health Case Studies

12:30 p.m. Concluding Remarks and Online Evaluation

12:45 Adjourn

Locations

In-person Learners

Children's Hospital Colorado
Anschutz Medical Campus
Medical Conference and Education Center – 2nd Floor
Mts. Yale and Princeton Conference Rooms
13123 East 16th Avenue, Aurora, Colorado 80045

Virtual Learners

Zoom link: *https://us06web.zoom.us/j/81119367997*

Continuing Education Credit

Registration, attendance, sign-in and submission of the online evaluation, including a written response to questions related to any changes in practice that you may make as a result of learning that took place at this activity, are required for successful completion and receipt of the certificate of attendance. Claim only those hours you attend.

Attendance

Learners are required to sign-in for this NCPD activity to verify participation in the program.

Signing-in: Sign-in opens 30-minutes prior to the event. There are two sign-in options:

1. Text the attendance code below to 720-790-4423 or
2. Enter the attendance code below at ce.childrenscolorado.org/code

Attendance Code: **39SCHOOL**

Evaluation

To obtain your NCPD certificate, the on-line **evaluation must be completed by midnight, Friday, June 27, 2025**. After completing the evaluation, you will be prompted to claim your NCPD credits. Any questions or concerns with access should be directed to ce@childrenscolorado.org.

Credit

Nursing
Children's Hospital Colorado is approved with distinction as a provider of nursing continuing professional development by Colorado Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. This offering for up to 11 nursing contact hours is provided by Children's Hospital Colorado (6/12: 7.25 hours; 6/13: 3.75 hours).

Other Care Providers
A general certificate of attendance will be available.

Faculty

Mandy A. Allison, MAEd, MD, MSPH
Professor of Pediatrics
Director, Prevention Research Center for Family and Child Health
Medical Director, Children's Hospital Colorado School Health Program
University of Colorado School of Medicine | Children's Hospital Colorado

Erin Bluth, BSN, RN, NCSN
Nurse Consultant
School Health Program
Children's Hospital Colorado

Jessica Dawson, MS, RN, CPN, ACM-RN
Clinical Specialty Coordinator
Ventilator Care Program
Breathing Institute, Children's Hospital Colorado

Stephanie De Jesus Ayala, MS
Program Manager
Partners for Children's Mental Health
Children's Hospital Colorado

Catherine Doernbrack, MSN, RN, CPNP-PC
Senior Instructor Pediatrics
University of Colorado School of Medicine
Primary Care Provider
Special Care Clinic and Epidermolysis Bullosa Center of Excellence
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Gina Edwards, MSN, FNP-C
Clinical Nurse II
Pediatric Call Center
Children's Hospital Colorado

Lauren Gulley, PhD, MA, BA
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Barbara Davis Center for Diabetes
University of Colorado School of Medicine Pediatric Psychologist

Cheri Hall, Ed.S.
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Jennifer Harris, MSE
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Children's Hospital Colorado

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Jodi Krause, M. Ed CBIS
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Department of Rehabilitation

Mattison Lord
School Specialist
Children's Hospital Colorado

Rikka Peaslee, BA
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EDP and General Medicine
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Assistant Professor of Pediatrics and Psychiatry
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Director of Behavioral Health, CARE Network

Grant R. Plost, MD
Assistant Professor of Dermatology
University of Colorado
Children's Hospital Colorado

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Pediatric Call Center
Children's Hospital Colorado

Courtney White, MS
Project ADAM Coordinator
Electrophysiology Coordinator
Children's Hospital Colorado, Heart Institute

Jennifer Whitmarsh, BSN, RN, CDCES
Specialty Care Coordinator- Diabetes Center
Children's Hospital Colorado

Skills Facilitators

Donna Anttila, MCC, BSN, RN, NCSN
School/Childcare Health Consultant
Children's Hospital Colorado

Brittany Blaylock, BSN, RN, CPN
School Health Nurse
Children's Hospital Colorado

Fides Carlson, BSN, RN
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School Health Department
Children's Hospital Colorado

Zoey Cleveland, BSN, RN
School Nurse Consultant
School Health Department
Children's Hospital Colorado

Holland Foley, BSN, RN, CPN
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Children's Hospital Colorado

Amy Lauffenburger, BSN, RN, CPN
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School Health Department
Children's Hospital Colorado

Kellie Medina, BSN, RN, CPN
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Children's Hospital Colorado

Laura Pickford, MSN, RN, CPN
Clinical Practice Specialist
Community Health
Children’s Hospital Colorado

Andria Redman, BSN, RN
School Nurse Consultant
School Health Department
Children's Hospital Colorado

Leah Sisson, BSN, RN
School Nurse Consultant
School Health Department
Children's Hospital Colorado

Financial Disclosure

Planners, faculty, and others in control of content (either individually or as a group) have no relevant financial relationships with ineligible companies.

ADHD Updates

for 39th Annual Community and School Health Pediatric Conference

Mandy A. Allison, MD, MSPH

06/12/2025

1

Case Example

- 2nd grader
- Born at 26 weeks gestation and spent a couple of months in the NICU
- Behavioral and learning issues at school
- Has IEP
- Diagnosed with ADHD but Concerta (stimulant medication) not helping at all

2

School Performance

3

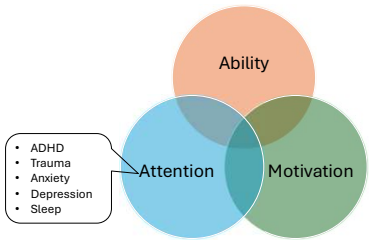
School Performance

What diagnoses or concerns might fit into each of the 'buckets'?

- Ability
- Attention
- Motivation

4

School Performance



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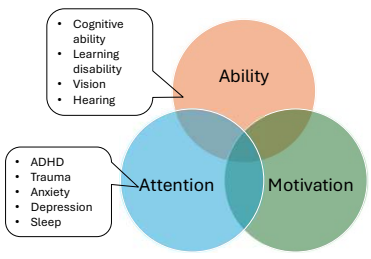
School Performance



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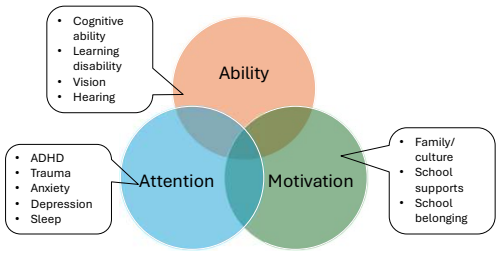
School Performance



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ADHD epidemiology

- US prevalence about 9%
- Median age of diagnosis 7 years
- Boys 2x more likely to be diagnosed than girls

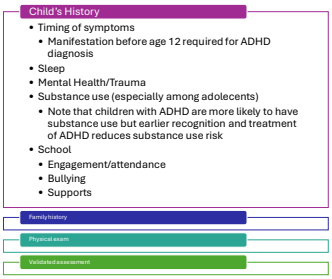
8

ADHD diagnostic evaluation

- Child's History
- Family history
- Physical exam
- Validated assessment

9

ADHD diagnostic evaluation



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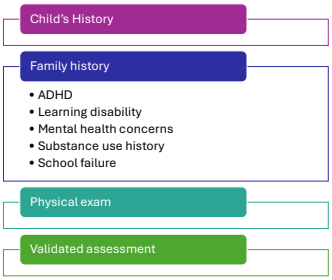
ADHD diagnostic evaluation



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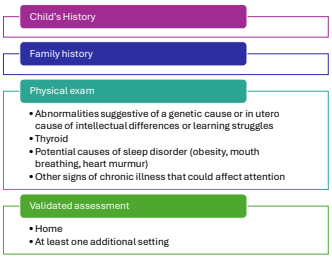
ADHD diagnostic evaluation



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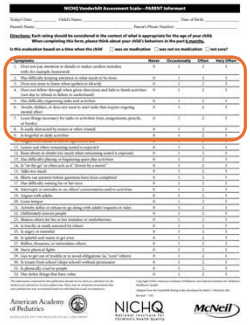
ADHD diagnostic evaluation

- History
- Family history
- Physical exam
- Validated assessment
  - Home
  - At least one additional setting



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ADHD diagnostic evaluation

- History
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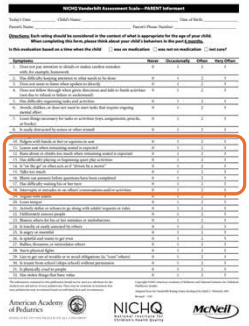

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ADHD Treatment

Medication

- Stimulant
  - Methylphenidates
  - Amphetamines
- Non-stimulant
  - Non-selective serotonin reuptake inhibitors
  - Alpha agonists

Non-Medication

- Behavior therapy
  - School supports
- Cognitive behavioral therapy
- Social skills groups

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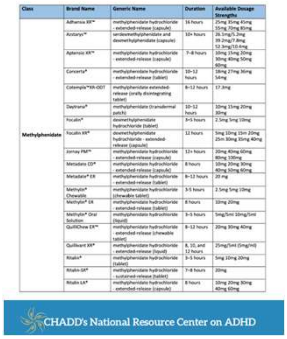
Medications



Class	Brand Name	Generic Name	Duration	Available Dosage Strengths
Methylphenidate	Adhansia XR®	methylphenidate hydrochloride - extended-release (capsule)	16 hours	25mg 35mg 45mg 55mg 70mg 85mg
	Aptensio XR®	methylphenidate hydrochloride - extended-release (capsule)	10+ hours	10mg 15mg 20mg 30mg 40mg 50mg 60mg
	Concerta®	methylphenidate hydrochloride - extended-release (tablet)	10–12 hours	18mg 27mg 36mg 54mg
	Cotempla™ XR-ODT	methylphenidate extended-release (orally disintegrating tablet)	8–12 hours	17.3mg
	Daytrana®	methylphenidate (transdermal patch)	10–12 hour	10mg 15mg 20mg 30mg
	Focalin®	dexmethylphenidate hydrochloride (tablet)	3–5 hours	2.5mg 5mg 10mg
	Focalin XR®	dexmethylphenidate hydrochloride - extended-release (capsule)	12 hours	5mg 10mg 15m 20mg 25m 30mg 35mg 40mg
	Jornay PM™	methylphenidate hydrochloride - extended-release (capsule)	11+ hours	20mg 40mg 60mg 80mg 100mg
	Metadate CD®	methylphenidate hydrochloride - extended-release (capsule)	8 hours	10mg 20mg 30mg 40mg 50mg 60mg
	Metadate® ER	methylphenidate hydrochloride - extended-release (tablet)	8–12 hours	20 mg
	Methylin® Chewable	methylphenidate hydrochloride - chewable tablet	3–5 hours	2.5mg 5mg 10mg
	Methylin® ER	methylphenidate hydrochloride - extended-release (tablet)	8 hours	10mg 20mg
	Methylin® Oral Solution	methylphenidate hydrochloride (liquid)	3–5 hours	5mg/5ml 10mg/5ml
	QuilliChew ER™	methylphenidate hydrochloride - extended-release (chewable tablet)	8–12 hours	20mg 30mg 40mg
	Quillivant XR®	methylphenidate hydrochloride - extended-release (liquid)	8, 10, and 12 hours	25mg/5ml (5mg/ml)
	Ritalin®	methylphenidate hydrochloride (tablet)	3–5 hours	5mg 10mg 20mg
	Ritalin-SR®	methylphenidate hydrochloride - sustained-release (tablet)	7–8 hours	20mg
	Ritalin LA®	methylphenidate hydrochloride - extended-release (capsule)	8 hours	10mg 20mg 30mg 40mg 60mg

CHADD's National Resource Center on ADHD

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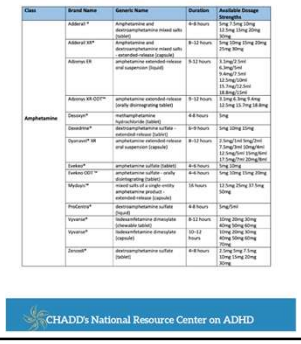
Medications



Class	Brand Name	Generic Name	Duration	Available Dosage Strengths
Amphetamine	Adderall ®	Amphetamine and dextroamphetamine mixed salts (tablet)	4–8 hours	5mg 7.5mg 10mg 12.5mg 15mg 20mg 30mg
	Adderall XR®	Amphetamine and dextroamphetamine mixed salts - extended-release (capsule)	8–12 hours	5mg 10mg 15mg 20mg 25mg 30mg
	Adzenys ER	amphetamine extended-release oral suspension (liquid)	9-12 hours	3.1mg/2.5ml 6.3mg/5ml 9.4mg/7.5ml 12.5mg/10ml 15.7mg/12.5ml 18.8mg/15ml
	Adzenys XR-ODT™	amphetamine extended-release (orally disintegrating tablet)	9–12 hours	3.1mg 6.3mg 9.4mg 12.5mg 15.7mg 18.8mg
	Desoxyn®	methamphetamine hydrochloride (tablet)	4-8 hours	5mg
	Dexedrine®	dextroamphetamine sulfate - extended-release (tablet)	6–8 hours	5mg 10mg 15mg
	Dyanavel® XR	amphetamine extended-release oral suspension (capsule)	8–12 hours	2.5mg/5ml 5mg/5ml 7.5mg/5ml 10mg/5ml 12.5mg/5ml 15mg/5ml 17.5mg/5ml 20mg/5ml
	Evekeo®	amphetamine sulfate (tablet)	4–6 hours	5mg 10mg
	Evekeo ODT ®	amphetamine sulfate - orally disintegrating (tablet)	4–6 hours	5mg 10mg 15mg 20mg
	Mydayis™	mixed salts of a single entity amphetamine product - extended-release (capsule)	16 hours	12.5mg 25mg 37.5mg 50mg
	ProCentra®	dextroamphetamine sulfate (liquid)	4-8 hours	5mg/5ml
	Vyvanse®	lisdexamfetamine dimesylate (chewable tablet)	8–12 hours	10mg 20mg 30mg 40mg 50mg 60mg
	Vyvanse®	lisdexamfetamine dimesylate (capsule)	10–12 hours	10mg 20mg 30mg 40mg 50mg 60mg
	Zenzedi®	dextroamphetamine sulfate (tablet)	4–8 hours	2.5mg 5mg 7.5mg 10mg 12mg 15mg 20mg 30mg

CHADD's National Resource Center on ADHD

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Medications

NON-STIMULANTS

Class	Brand Name	Generic Name	Duration	Available Dosage Strengths
Norepinephrine reuptake inhibitor	Strattera®	atomoxetine hydrochloride (capsule)	24 hours	10mg 18mg 25mg 40mg 60mg 80mg 100mg
	Qelbree™	viloxazine extended-release (capsule)	24 hours	100mg 150mg 200mg
Alpha agonist	Kapvay®	clonidine hydrochloride extended-release (tablet)	12–24 hours	0.1mg 0.2mg
	Intuniv®	guanfacine hydrochloride - extended-release (tablet)	12–24 hours	1mg 2mg 3mg 4mg

RESOURCE:

CHADD—Children and Adults with Attention Deficity/Hyperactivity Disorder

https://d393uh8gb46l22.cloudfront.net/wp-content/uploads/2021/09/ADHD-MEDICATIONS-APPROVED-BY-THE-US-FDA-2021.pdf

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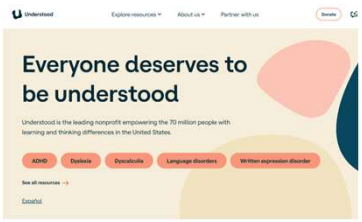
Behavioral Therapies



RESOURCE:
Understood.org

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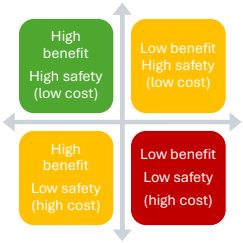
Additional therapies

- Nutrition
- Sleep
- Homeopathic medications
- ADHD coaching
- Neurofeedback
- Digital intervention software such as 'Brain Training'



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Treatment goals

- Focus on function
- Set target behaviors that are easily monitored/measurable
- Regular follow up
  - Every 1 to 3 months while figuring out treatment
  - Every 6 months once stable

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Role of the school nurse

- Think about and ask about other diagnoses
- Attend to school attendance
- Serve as a link between the school and the pediatrician/primary care provider
- Serve as a resource for families and school staff

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Case Example

- 2nd grader
- Born at 26 weeks gestation and spent a couple of months in the NICU
- Behavioral and learning issues at school
- Has IEP
- Diagnosed with ADHD but Concerta (stimulant medication) not helping at all

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Join up with 2 or 3 people next to you (for groups of 3 or 4) and discuss what you would do next for this student. If you are attending online, put your ideas in the chat. I will call on a couple of groups to share their thoughts. There is not one, correct answer!

5 minute exercise

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RESOURCES

CHADD

- https://chadd.org/
- https://chadd.org/about-adhd/complementary-and-other-interventions/
- https://d393uh8gb46l22.cloudfront.net/wp-content/uploads/2021/09/ADHD-MEDICATIONS-APPROVED-BY-THE-US-FDA-2021.pdf

UNDERSTOOD.ORG

- https://www.understood.org/en/articles/classroom-accommodations-for-adhd

AMERICAN ACADEMY OF PEDIATRICS

- https://publications.aap.org/pediatrics/article/144/4/e20192528/81590/Clinical-Practice-Guideline-for-the-Diagnosis
- https://www.healthychildren.org/English/health-issues/conditions/adhd/Pages/Determining-ADHD-Medication-Treatments.aspx?_gl=1*4mbu8j*_ga*MTAwNjY1NDM5NS4xNzExMjA2NzY1*_ga_FD9D3XZVQQ*MTcyODk0MDQyNy4yNi4xLjE3Mjg5NDA5OTIuMC4wLjA.
- https://www.healthychildren.org/English/health-issues/conditions/adhd/Pages/Behavior-Therapy-Parent-Training.aspx?_gl=1*1id4l2i*_ga*MTAwNjY1NDM5NS4xNzExMjA2NzY1*_ga_FD9D3XZVQQ*MTcyODk0MDQyNy4yNi4xLjE3Mjg5NDExNDMuMC4wLjA.

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Questions?

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JUNE 12, 2025

IS YOUR SCHOOL PREPARED FOR A CARDIAC EMERGENCY?

Discussion of sudden cardiac arrest and how to respond in an emergency

Children's Hospital Colorado

1

Today's Objectives:

1. Identify sudden cardiac arrest
2. Discuss the importance of a comprehensive cardiac emergency plan
3. The role of Project ADAM

2

Cardiac Arrest in the U.S.

Each year, out-of-hospital cardiac arrests strike more than 350,000 people across the United States and affects seemingly healthy individuals of all ages, races, genders, often without warning.

Using conservative estimates, cardiac arrest is the third leading cause of death in the United States, following cancer and heart diseases.

3

CARES Registry

The Cardiac Arrest Registry to Enhance Survival

Without a reliable method of data collection, communities can't measure the effectiveness of their response systems. CARES was developed to help communities determine standard outcome measures for out-of-hospital cardiac arrest (OHCA) while allowing for quality improvement efforts and benchmarking capability to improve care and increase survival.

4

2024 Colorado CARES Data

	OHCA Incidence					Non-Traumatic Etiology Survival Rates		Bystander Intervention Rates	
	CARES Cases Reported	CARES Population Catchment	Total State Population	% Population Covered	Incidence Rate (per 100,000)	Overall Survival to Hospital Discharge (%)	Utstein Survival (%)	CPR (%)	Public AED Use (%)
National	**137,119**	**174,141,709**	**334,914,895**	**52.0%**	**78.7**	**10.5**	**33.4**	**41.7**	**12.6**
State									
Alaska	527	590,952	733,406	80.6%	89.2	12.3	35.1	79.7	16.1
California	24,008	32,535,740	38,965,193	83.5%	73.8	8.7	31.7	42.0	9.9
Colorado	3,500	4,852,658	5,877,610	82.6%	72.1	12.6	36.3	43.0	16.4
Connecticut	1,888	2,836,386	3,617,176	78.4	66.6	8.7	40.8	23.8	10.3
Delaware	1,253	1,031,890	1,031,890	100.0%	121.4	13.8	45.0	34.4	14.9
Florida	10,437	11,731,223	22,610,726	51.9%	89.0	12.3	31.8	39.5	14.1
Hawaii	1,560	1,435,138	1,435,138	100.0%	108.7	13.0	34.9	43.8	18.2
Kansas	1,407	1,813,183	2,940,546	61.7%	77.6	11.9	34.9	50.8	12.6
Maine	1,352	1,395,722	1,395,722	100.0%	96.9	8.5	23.6	50.6	11.1
Michigan	8,632	8,849,839	10,037,261	88.2%	97.5	9.0	30.5	40.0	12.8
Minnesota	3,478	5,276,497	5,737,915	92.0%	65.9	11.5	35.0	36.8	12.3
Missouri	2,829	3,325,545	6,196,156	53.7%	85.1	10.3	31.2	37.8	10.9
Montana	656	1,132,812	1,132,812	100.0%	57.9	11.3	36.2	49.3	10.8
Nebraska	661	1,152,390	1,978,379	58.3%	57.4	15.7	42.2	46.3	21.4
Nevada	2,309	3,004,759	3,194,176	94.1%	76.8	14.0	42.2	57.5	19.0
North Carolina	8,471	9,803,971	10,835,491	90.5%	86.4	11.5	30.8	44.4	13.9
Oregon	2,919	3,933,331	4,233,358	92.9%	74.2	13.4	37.0	54.6	11.5
Pennsylvania	7,277	9,021,953	12,961,683	69.6%	80.7	9.3	33.4	37.1	17.2
Utah	1,915	3,267,846	3,417,734	95.6%	58.6	14.1	42.8	48.1	13.3
Vermont	587	647,464	647,464	100.0%	90.7	7.8	11.7	46.4	5.8
Washington	5,188	7,631,371	7,812,880	97.7%	68.0	14.1	40.8	53.6	13.0
Wisconsin	2,882	3,791,731	5,910,955	64.2%	76.0	10.3	34.7	34.3	12.6
District of Columbia	751	678,972	678,972	100.0%	110.6	7.5	37.5	40.2	7.0

5

Out-of-Hospital Cardiac Arrest (OHCA)

Bystanders can provide basic life support treatments, by activating EMS, administering CPR and applying defibrillation with an AED.

Bystander-administered CPR is associated with substantial increases in survival rates and with better neurologic outcomes following cardiac arrest.

41.7%
Percent of patients who received bystander CPR

12.6%
Percent of patients who had a bystander apply an AED

8.2%
Percent of patients who survived to hospital discharge with positive neurological outcome

6

Each minute without CPR/AED treatment decreases the likelihood of survival with good neurologic outcomes. Decreasing the amount of time between cardiac arrest onset and the first chest compressions is critical.

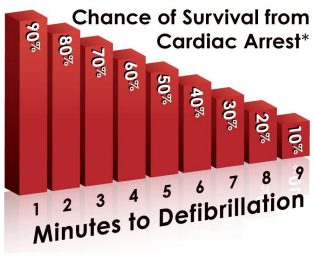

Image is from Arizona Heart Rhythm Center: http://azheartrhythmcenter.com/patient-education/what-is-sudden-cardiac-arrest/

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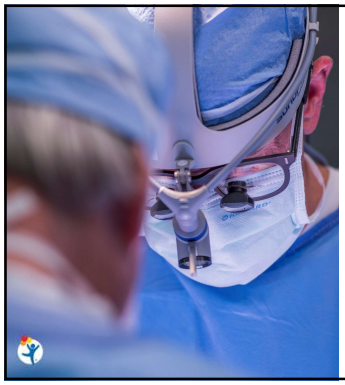

Even with access to an AED, a comprehensive emergency action plan and enough staff members trained in CPR...***nothing happens if you do not recognize sudden cardiac arrest.***

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Recognition of sudden cardiac arrest

1. Almost instantaneous loss of consciousness and collapse
2. Absent or agonal breathing
3. Seizure like activity
4. Eyes open and/or rolled back

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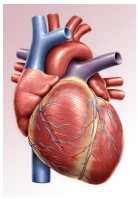
Know the difference between Heart Attack and Cardiac Arrest



Heart Attack		Cardiac Arrest
A heart attack happens when a coronary artery becomes blocked. This stops blood flow to one part of the heart. But the heart continues to beat.	VS	Cardiac arrest occurs when the heart beats fast and wildly or stops beating altogether. This can be caused by a heart attack or a malfunction in the heart's electrical system.
Early Warning Signs		Early Warning Signs
An individual may have chest pain, fatigue, weakness, nausea, or shortness of breath.		Usually there are no early warning signs before the individual collapses. Some people may experience palpitations, dizziness, chest pain momentarily before they lose consciousness and collapse.

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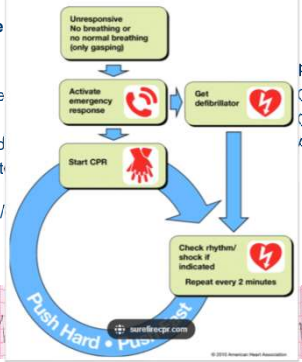
Witnessed collapse

RECOGNITION
- Sudden collapse
- Unresponsive
- Eyes open/rolled
- Gasping/respirat movements
- Seizure/shaking/



PONSE
Call for help
Chest compressions
Apply AED

11

Recognition goes a long way to SAVE a life!

Dr. Jonathan Drezner

- Team physician for the Seattle Seahawks, OL Reign and UW Huskies
- Director for the University of Washington Sports Cardiology
- co-Chair of the UW Medicine Cardiovascular Wellness and Prevention Program.

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Cardiac Chain of Survival

1. Activation of emergency response (9-1-1)
2. High-quality CPR
3. Defibrillation by an AED
4. Advanced resuscitation
5. Post-cardiac arrest care
6. Recovery

13

Preparing your school for a cardiac emergency: WHERE DO I START?

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Project ADAM®

SAVES LIVES

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Project ADAM® SAVES LIVES

Project ADAM (Automated Defibrillators in Adam's Memory) began in 1999 after the death of Adam Lemel, a 17-year-old high school student who collapsed and died while playing basketball. Adam suffered a sudden cardiac arrest, and an AED was not available.

Since its inception, Project ADAM has saved over 200 lives across the country.

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Project ADAM® SAVES LIVES

49 ESTABLISHED PROGRAMS **33** STATES

Updated February, 2025

ESTABLISHED AFFILIATE SITES

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In collaboration with Children's Hospital Colorado, Project ADAM Colorado is a program committed to helping schools implement and sustain a public access defibrillation program. The goals of the program are to:

- Increase awareness of the signs and symptoms of sudden cardiac arrest
- Provide staff with the necessary resources to best prepare for a cardiac emergency
- Offer guidance for conceptualization and planning a program in your school
- Assist with acquiring training in CPR and AED use
- Collaborate with staff on the development of an emergency response plan

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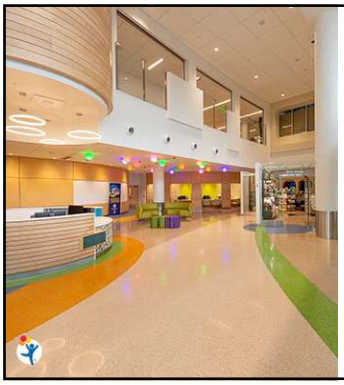

Why target schools to develop Public Access Defibrillation Programs?

On any given day, approximately 20 percent of the community is in its schools.

In Colorado, there are 179 school districts (2024-2025).
146 districts meet the definition of rural or *small* rural.

Average EMS response time is 14 minutes in rural settings, with nearly 1 of 10 encounters waiting almost a half hour for the arrival of EMS personnel.
JAMA Surg. 2017 Oct 152 (10). 983-984

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Cardiac arrest preparedness in schools should include:

1. CPR training for school staff, teachers, coaches and students.
2. Cardiac Emergency Response Plans (CERPs) to ensure that all staff can respond quickly and decisively to a cardiac arrest on the school grounds.
3. Automated External Defibrillators (AEDs) to provide rapid defibrillation in the event of a sudden cardiac arrest caused by ventricular fibrillation, with ongoing maintenance plans and drills.
4. Drills to enhance staff familiarity, rapid on-site communication and practiced coordination with local Emergency Medical Services.
5. Emergency Action Plans (EAPs) for individual students known to be at risk.

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COLORADO STATE LAWS REGARDING CPR/AED IN SCHOOLS

Colorado's approach to CPR and AED training in public schools is less stringent compared to many other states in the country. While some states have enacted mandatory requirements, Colorado's legislation primarily encourages, rather than mandates, such training.
Colorado remains one of the few states without mandatory CPR and AED training requirements for high school students.

C.R.S. 22-1-125.5

Requires all coaches of athletic programs employed by local education providers are certified in CPR and have received instructions in the effective use of an AED.

C.R.S. 13-21-108.1

Written plans are in place concerning AED placement, pre-planned coordination with EMS, AED maintenance and reporting of AED utilization.

SB25-191

Mandates schools to adhere to nationally recognized AED guidelines for ***high school athletics***. Also modernizes state requirements by removing the need for physician signatures and lists of authorized AED users.

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EMERGENCY ACTION PLAN IN THE EVENT OF SCA
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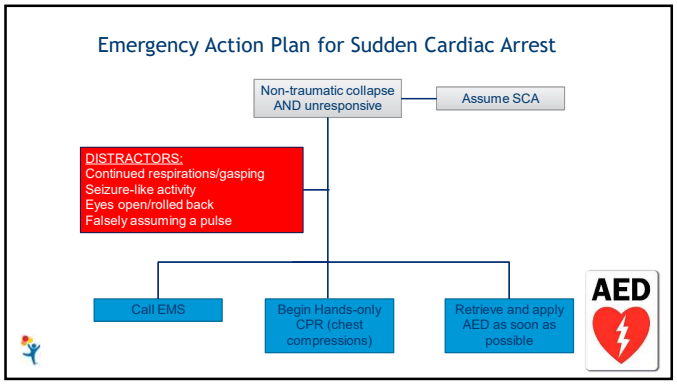
Emergency Action Plan for Sudden Cardiac Arrest
Non-traumatic collapse AND unresponsive
Assume SCA
DISTRACTORS:
Continued respirations/gasping
Seizure-like activity
Eyes open/rolled back
Falsely assuming a pulse
Call EMS
Begin Hands-only CPR (chest compressions)
Retrieve and apply AED as soon as possible
AED

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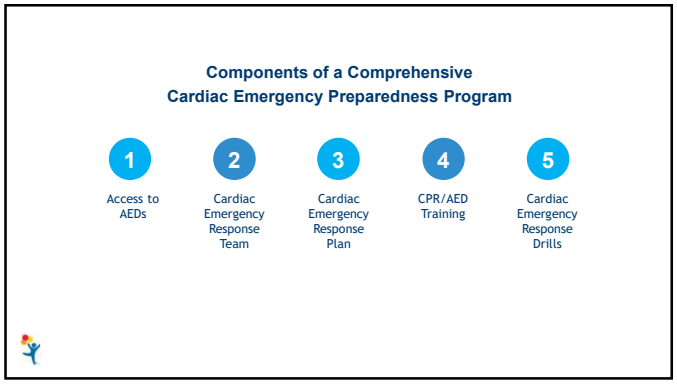
Components of a Comprehensive Cardiac Emergency Preparedness Program
1
Access to AEDs
2
Cardiac Emergency Response Team
3
Cardiac Emergency Response Plan
4
CPR/AED Training
5
Cardiac Emergency Response Drills

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Automated External Defibrillators (AEDs)

1. The placement of the AED(s) makes it accessible from any part of the building or campus within 2-3 minutes.
2. AED(s) have clear signage.
3. The AED(s) is checked for performance readiness at least monthly and documented each time.
4. A first responder kit is near or attached to the AED which includes: CPR barrier device, scissors, gloves, razor and towel.

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Cardiac Emergency Response Team

1. A CPR-AED site coordinator is identified, who oversees the CPR-AED program activities and training.
2. There is a designated cardiac emergency response team comprised of at least 10% of staff or 5-10 people.

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Cardiac Emergency Response Plan

1. We have a written cardiac emergency response plan that is reviewed annually.
2. We have a cardiac emergency communication code to notify responders and others in the area that an incident is occurring.
3. Local emergency medical services have been notified of our CPR-AED program.
4. Our school's written CERP, including location of AED(s), has been shared with extracurricular activities, community groups who utilize school campus.

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Training/Education

1. CPR-AED training for the emergency response team is updated annually and there is a system in place to track retraining.
2. All faculty and staff know where the AED(s) are located and how to access them.
3. All faculty and staff have annual awareness training on SCA and review the school's CERP.

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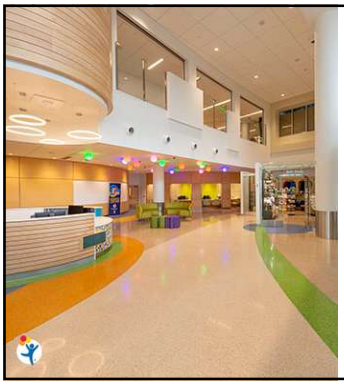

Cardiac Emergency Response Drills

We recommend schools conduct at least one annual cardiac emergency response drill to test the emergency plan and communication. A drill summary checklist should be utilized for planning purposes and post-drill review.

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IT TAKES A VILLAGE

Project ADAM recommends including several key school, medical and community partners to implement and sustain a successful program.

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Project ADAM School Site Coordinator

To build a sustainable school program, it is critical to identify an individual willing to serve as the Project ADAM school site coordinator. This person can be a:

- School nurse
- Athletic director
- Athletic trainer
- Physical education teacher
- Teacher
- Administrator
- Volunteers

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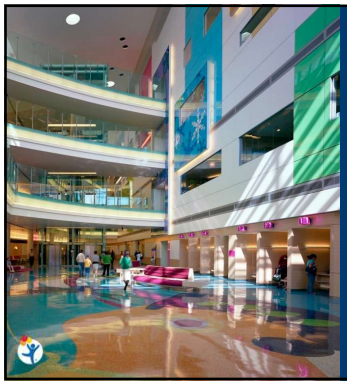

Cardiac Emergency Response Team

Create a team within your school made up of at least 5-10 people or 10% of the school's staff that will respond in the event of a cardiac emergency. Team members should be dispersed throughout the campus to ensure adequate coverage.

This team will also commit to participating in at least one cardiac emergency response drill per year so that a practiced plan is in place if a cardiac emergency occurs.

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Team members may include:

- **Custodial staff**
- **Athletic trainer**
- **Athletic director**
- **Coach**
- **Teach**
- **School Nurse**
- **School Resource Officer**
- **Administration**

Key Responsibilities:

- Up-to-date CPR/AED training
- Participate in at least one cardiac emergency drill annually
- Commit to regular meetings with the team to improve response and communication

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9NEWS

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Empower
Courtney White, MS
Project ADAM Coordinator
Courtney.White@childrenscolorado.org

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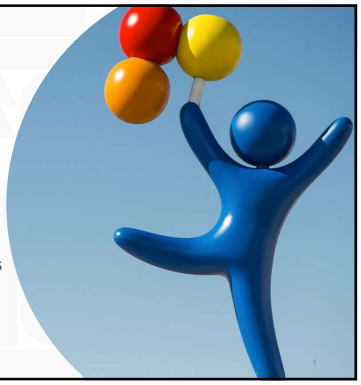
JUNE 12, 2025

The Unique Role of the Hospital Educator and Liaison

Collaborating on Behalf of Students and Families with Medical and Mental Health Needs



Children's Hospital Colorado here, it's different.

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Objectives

1. Brief review of stakeholder perspectives
2. Overview of hospital wide school services
3. Review of service models and re-entry supports
4. Case study and stakeholder collaboration
5. Q and A

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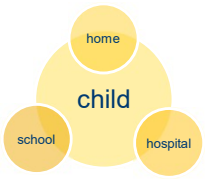
Who are key stakeholders?

School and home as primary ecosystems in childhood

For the child with chronic health condition, the hospital becomes equally as integral a part



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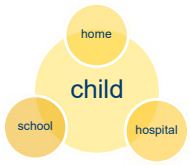
Caregivers of children with special health care needs (CSHCN) report:

- More frequent medical care
- More specialized therapies
- Medication needs and equipment at home and school
- Face greater psychosocial challenges

Negative impact on engagement and motivation

- Miss 7+ days of school, 3x more than kids without health care needs
- Grade retention is 2x as likely
- More frequent phone calls home for behavioral or medical needs
- Social challenges
- Lower motivation and achievement

RISK FOR SCHOOL AVOIDANCE AND CHRONIC ABSENTEEISM



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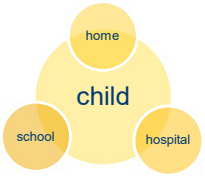
Review of Key Stakeholder Perspectives

Parents Want to Know/Express: impact on learning short and long term, limited knowledge on education and available support, recovery of skills, psychosocial challenges, nervousness in understanding medical care in the school setting

Schools Want to Know/Express: connection between diagnosis and adverse learning outcomes, misinformed beliefs or inaccurate information, feel healthcare and parents are best poised to provide guidance

RE: Communication and Collaboration

- Formal and bi-directional relationship (not through parents), little PD or course work addresses this population
- Identify needs early, proactive planning
- Disorganized methods=unintentional parent advocate role



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CHCO Teachers

Jodi Krause, M.Ed CBIS
Education Coordinator, Rehabilitation Outpatient 720-777-7465

Emily Frank, CBIS
School Specialist Rehab, 6th floor 74285

Megan Woody
School Specialist CCBD, ESP 73604

Mattison Lord
School Specialist Heart Institute, Pulmonology 720-777-8891

Kelsey Dunst
Education Specialist, Care Transitions Team, Pediatric Mental Health Institute 720-777-8794

Rikka Peaslee
School Specialist EDP, general medicine 720-777-3620

Cheri Hall, EdS, MEd, MSW
Education Specialist, Care Transitions Team, Pediatric Mental Health Institute 720-777-8374

Jennifer Harris, MSE
Education Specialist Sie Center for Down Syndrome 720-777-3122

Dana Christensen Udlock
School Specialist CCBD, Dialysis 720-777-8275

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Eating Disorder Day Treatment Program

A little about EDP:
- Length of stay is 6-12 weeks.
- Program is 11 hours per day 7 days/week. They earn more time out of program as they progress
- School group offered 8:30-10:00 Monday-Friday.

Primary Role During Admission:
- Initiate communication with school team and explain length of stay and recommended amount of work.
- Work with patient/student in the classroom and support them with assignments from their school team.

Discharge Communication:
- Provide school with lunch supervision recommendations and accommodations.
- Facilitate a re-entry meeting with school team and family on supporting the student in their return to school

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Sie Center for Down Syndrome

About the Sie Center for Down Syndrome:
- Largest pediatric Down syndrome clinic in the world
- Provide yearly consultative assessments for individuals with Ds ages prenatal to age 22.
- Only Ds clinic with a full time Education Specialist.

Role of the Education Specialist:
- Provides clinical care, academic therapy including literacy evaluations
- Collaborate with Inpatient team for Ds patient admissions
- IEP review & support, attendance at IEP meetings, school observations
- "Translates" clinical recommendations to be applied in the education setting
- School / district / community professional development, and parent training classes
- Conduct research related to Ds and educational best practices

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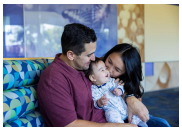
PMHI Care Transitions Team

The Care Transitions Team is a new program within the Pediatric Mental Health Institute that helps to support families that qualify for 60 - 90 days post discharge with the goal of preventing readmissions.



The Education Specialist supports patient educational needs mainly through contact with parents/guardians and schools. Support can include, but is not limited to:

- Connecting with parents/guardians/patients to clarify their school concerns
- Contacting the school team to follow up on patient's return to school (only with a release)
- Reviewing charts, evaluations, school information including 504 plan or IEP paperwork, etc. to make recommendations through a formal letter/report
- Under certain circumstances, may attend re-entry meetings and/or IEP meetings
- Connecting parents/guardians to advocates as applicable
- Taking part in care coordination meetings if applicable

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Rehabilitation Unit

Fun Facts: Serve Colorado and 6 surrounding states. Many of our multidisciplinary clinics are the only of its kind in our region.

Primary Role on Inpatient- Emily Frank, Inpatient Teacher

- Initiate communication with school team
- Work with patient/student in multidisciplinary classroom
- Provide school team progress towards discharge
- Provide discharge recommendations for school
- Provide supportive discharge summaries and testing if applicable

Discharge Communication Tool:

- **School discharge checklist** and applicable discharge summaries and testing

Post Discharge- Jodi Krause, Education Coordinator

- Acquired Brain Injury Clinic, Non-Accidental Brain Injury Clinic, Spinal Cord/Defects Clinic populations- synthesize updated multidisciplinary recs for school and reinitiate communication to share out
- "pie in the sky" connect with school teams prior to clinic visits to support school team needs and questions

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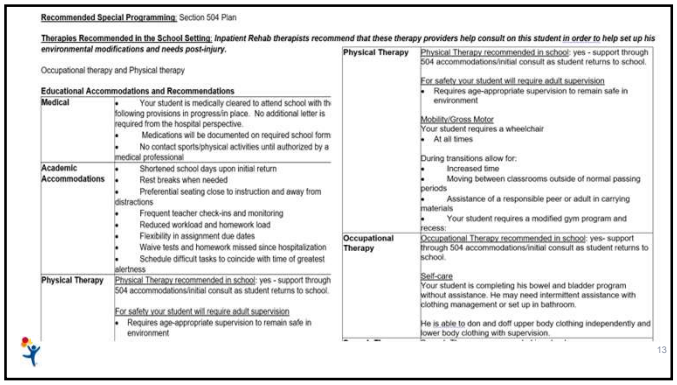

Recommended Special Programming: Section 504 Plan

Therapies Recommended in the School Setting: *Inpatient Rehab therapists recommend that these therapy providers help consult on this student in order to help set up his environmental modifications and needs post-injury.*

Occupational therapy and Physical therapy

Educational Accommodations and Recommendations

Medical	• Your student is medically cleared to attend school with th following provisions in progress/in place. No additional letter is required from the hospital perspective. • Medications will be documented on required school form • No contact sports/physical activities until authorized by a medical professional
Academic Accommodations	• Shortened school days upon initial return • Rest breaks when needed • Preferential seating close to instruction and away from distractions • Frequent teacher check-ins and monitoring • Reduced workload and homework load • Flexibility in assignment due dates • Waive tests and homework missed since hospitalization • Schedule difficult tasks to coincide with time of greatest alertness
Physical Therapy	Physical Therapy recommended in school: yes - support through 504 accommodations/initial consult as student returns to school. For safety your student will require adult supervision • Requires age-appropriate supervision to remain safe in environment
Physical Therapy	Physical Therapy recommended in school: yes - support through 504 accommodations/initial consult as student returns to school. For safety your student will require adult supervision • Requires age-appropriate supervision to remain safe in environment Mobility/Gross Motor Your student requires a wheelchair • At all times During transitions allow for: • Increased time • Moving between classrooms outside of normal passing periods • Assistance of a responsible peer or adult in carrying materials • Your student requires a modified gym program and recess:
Occupational Therapy	Occupational Therapy recommended in school: yes- support through 504 accommodations/initial consult as student returns to school. Self-care Your student is completing his bowel and bladder program without assistance. He may need intermittent assistance with clothing management or set up in bathroom. He is able to don and doff upper body clothing independently and lower body clothing with supervision.

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Current state of outpatient rehab school program…

Rehab Clinics

- Spina Bifida/Spinal Defects*
- Neuromuscular *
- Functional Neurologic Disorder**
- Cerebral Palsy and Selective Dorsal Rhizotomy Clinic
- Charcot-Marie-Tooth*
- Brachial Plexus
- Genetic/Gen Rehab

Our "Why"

- ***Equity***
- Inclusion/Exclusion criteria
- Referral process

Growing Pains

- **Outreach and collaboration w/established relationships and longstanding diagnosis**
- **Community partnership**

*Multidisciplinary
** Embedded Ed Coord

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Major Medical Units Supported by School Specialists

We serve Pulmonology, Cardiology, Center for Cancer and Blood Disorders (CCBD), Kidney Center, and General Medicine.

- We have just started supports for extended stay patients (ESP) who are medically cleared to discharge but do not have a safe discharge plan. We are still learning how to best support this population.

Primary Role During Admission:

- Checking in with family to discuss their needs and concerns.
- Provide bedside instruction and school communication.

Discharge Communication:

- Work with medical teams on documentation of their admission and ongoing supports they may need at school.

Primary Role Post Discharge:

- Attend re-entry, 504, and IEP meetings if applicable,
- CCBD specifically the School Specialist will support in and outpatient throughout their treatment.

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Case Study: Meet Maya

Let's dig into stakeholders further. We know it's school-but who specifically is a valuable or need to know stakeholder in this scenario that will be best support the greatest return to school outcome for Maya and her family?

Maya
needs
requi
medi
medi
switc
and p
and C

After some time in the Cardiac Intensive Care Unit (CICU) immediately following her surgery, Maya was transferred to the Cardiac Progressive Care Unit (CPCU) and, given her anticipated length of stay, her physician team initiated a school services request and the primary cardiology teacher, Mattison Lord, was notified.

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Maya meets Matti in the CPCU

EARLY ADMISSION:
- Explanation of role and services
- HIPAA consent signed, school contacted, work gathered
- Bedside sessions initiated

MIDDLE ADMISSION:
- Continues teaching sessions
- Works with med team and school RN/teachers on initial logistics (ie, paperwork for short homebound due to IV needs, forms for medications at school, ensure appropriate toileting access upon return

APPROACHING DISCHARGE:
- Matti assists in gathering hospital recs on identified form to share with school
- Offers hospital to school transition meeting with school, hospital and parents
- Offers peer education possibilities on student absence through Child Life partnership

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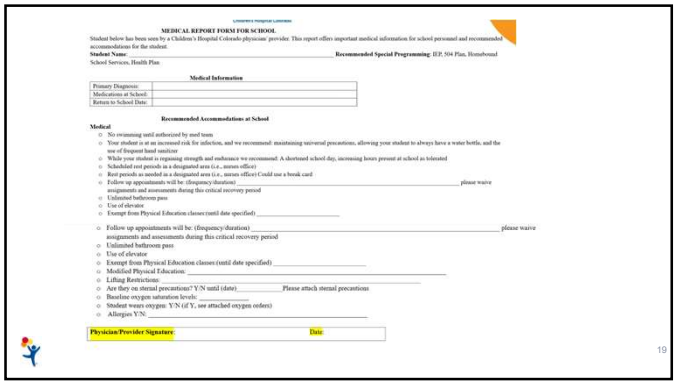

MEDICAL REPORT FORM FOR SCHOOL

Student below has been seen by a Children's Hospital Colorado physician/ provider. This report offers important medical information for school personnel and recommended accommodations for the student.

Student Name: _____ **Recommended Special Programming**: IEP, 504 Plan, Homebound School Services, Health Plan

Medical Information

Primary Diagnosis:	
Medications at School:	
Return to School Date:	

Recommended Accommodations at School

Medical

- No swimming until authorized by med team
- Your student is at an increased risk for infection, and we recommend: maintaining universal precautions, allowing your student to always have a water bottle, and the use of frequent hand sanitizer
- While your student is regaining strength and endurance we recommend: A shortened school day, increasing hours present at school as tolerated
- Scheduled rest periods in a designated area (i.e., nurses office)
- Rest periods as needed in a designated area (i.e., nurses office) Could use a break card
- Follow up appointments will be: (frequency/duration) _____ please waive assignments and assessments during this critical recovery period
- Unlimited bathroom pass
- Use of elevator
- Exempt from Physical Education classes(until date specified) _____
- Follow up appointments will be: (frequency/duration) _____ please waive assignments and assessments during this critical recovery period
- Unlimited bathroom pass
- Use of elevator
- Exempt from Physical Education classes (until date specified) _____
- Modified Physical Education: _____
- Lifting Restrictions: _____
- Are they on sternal precautions? Y/N until (date)_____Please attach sternal precautions
- Baseline oxygen saturation levels: _____
- Student wears oxygen: Y/N (if Y, see attached oxygen orders)
- Allergies Y/N: _____

Physician/Provider Signature: **Date**:

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From your perspective, what else do stakeholders need to ask and know from each other to improve situation and outcomes?

School RN/School Team

- Is family comfortable sending her back to school? Was this planned or sudden?
- Psychosocial support needed or beneficial in school?
- Can family accommodate the potential for partial day? If not, can we build into school day?

Hospital Teacher/Team

- Preexisting 504 or IEP? If so, for what? Share instructional strategies helpful?
- Access to nursing full time or health tech?
- Access to elevator to support fatigue?

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Frequently Asked Questions

Should we initiate homebound when we hear from the hospital teacher?

Will you provide a letter of medical clearance to return to school?

Will the hospital write the recommended 504 or IEP before discharge?

The school would like access to the medical record. Can the hospital teachers help with that?

Children's Hospital Colorado

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References

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Kathleen M. Kingery, MA,* Megan E. Narad, PhD,* H. Gerry Taylor, PhD,† Keith Owen Yeates, PhD,‡ Terry Stancin, PhD,§ Shari L. Wade, PhD*. Do Children Who Sustain Traumatic Brain Injury in Early Childhood Need and Receive Academic Services 7 Years After Injury?

Levels of Interdependence in Diabetes Self-Care

LAUREN D. GULLEY, PHD
PEDIATRIC PSYCHOLOGIST/ASSISTANT PROFESSOR
THURSDAY, JUNE 12, 2025

1

Introduction

Clinical	Research
1. Pediatric Type 1 Diabetes • July 2024 – present • Barbara Davis Center for Diabetes	1. Group Therapy for Pediatric T2D (Current) American Diabetes Association
2. Pediatric Type 2 Diabetes and Polycystic Ovary Syndrome • August 2019 – present • Lifestyle Medicine Program at Children's Hospital Colorado	2. Group Therapy for Polycystic Ovary Syndrome (Past) American Psychological Association

2

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- I have no conflicts of interest to disclose
- I receive research funding from the following institutions:
  - American Diabetes Association
  - National Institute of Diabetes and Digestive and Kidney Diseases
- Acknowledgements to Dr. Holly O'Donnell, PhD and Ellen Fay-Itzkowitz, LCSW, CDCES for supporting some of the content in today's presentation

3

Learning Objectives

1. Describe how changes in the developing brain impact interdependence in diabetes self-care
2. Introduce a *framework* for levels of inter-dependence in diabetes self-care
   With recent case examples from BDC Psychology!
3. Highlight recommendations for adults - including nurses - to scaffold interdependence

4

Diabetes is a TEAM SPORT across the lifespan

Wiebe et al., 2016

5

"But they ***know*** how to do it!"

Content…	…but also *Process!*
• Nutrition	• Set goals / make plans
• Math/numeracy	• Follow multi-step
• Insulin x food	• Monitor trends
• Insulin x activity	• Problem-solve
• How to finger stick	• Manage emotions
• How to change a site	• Ask for help

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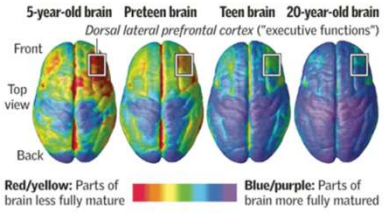
6

The Developing Brain



7

Early Childhood (2-6 yr)

Child's Job	Adult's Job
▪Trust and cooperate with other adults to support diabetes management	▪Monitor and identify symptoms of low and high BG ▪Monitor food intake and manage insulin dosing ▪Teach, communicate, and collaborate with other adults about diabetes management

Chiang et al., 2018

8

Late Childhood (7-11 yr)

Child's Job	Adult's Job
▪With adult, share in identification of symptoms of low and high BG ▪With adult supervision / support, carry supplies and treat low BG ▪With adult, share in problem-solving steps to manage diabetes	▪With child, teach, model, and guide identification of symptoms ▪With child, supervise / support carrying supplies and treat low BG ▪ Give them "small jobs" ▪With child, teach, model, and guide through problem-solving ▪Praise and reinforce

Chiang et al., 2018

9

Childhood Challenges

- Unpredictability in appetite, eating, and activity (and how to dose!)
- Behavioral cooperation with diabetes management by adults
- Fidelity and flexibility in diabetes management
- Low understanding of short and long-term risks/benefits
- Not wanting to "miss out" or "stick out" from others
- Frequent illnesses

10

Case Study, "Jane" 12F

- **T1D Referral Concern:** parent-child communication and interdependence re: T1D management, communicating about T1D with folks outside family (e.g., teachers)
- Social/Academic History
  - Lives in south metro area suburbs with Mom, Dad, and 3 siblings; 6th grade hybrid in-person learning and homeschooling, club soccer, Mandarin tutoring (sibling adopted from China), church and youth group
- Behavioral Health History
  - No prior hx
- T1D-Related History
  - Diagnosed with T1D June 2024
  - A1c at time of referral to BDC Psychology (August 2024) was 6.9%
  - OP5 started ~August 2024

11

Case Study, "Jane" 12F

- **T1D Interdependence Target:**
  - "With adult, share in problem-solving steps to manage diabetes"
  - E.g., Mom + Dad date night when the OP5 needed replacing
  - E.g., Low BG on New Year's Eve at friend's house
- **T1D Interdependence Interventions:**
  - Identify and express emotions felt about having and managing T1D
  - Role-play how to ask parents for help around a diabetes task

12

Early Teen (12-15 yr)

Teen's Job	Adult's Job
▪Identify and address symptoms of low and high BG	▪Identify new ways to observe or monitor diabetes management
▪Problem-solve and make decisions about how to manage diabetes	▪Adjust support and collaborative problem-solving with teen
▪Teach, communicate, and collaborate with others about diabetes management	

Chiang et al., 2018

13

Teen Challenges

- Fluctuations in insulin needs during puberty
- Higher risk of diabetes-related distress/burnout with independence
- Worsening depression, anxiety, disordered eating
- Weight and body image concerns
- Decreased time with adults and more time with peers
- Higher value on short-term rewards, lower attention to risk or long-term consequences

14

Case Study, "Alan", 13M

- **T1D Referral Concern:** perfectionism around high blood sugars that led to increased anxiety and "shutting down"
- Social/Academic History
  - 13 year/old male living in south metro area suburbs with Mom and Dad; 10th grade in-person learning, basketball, Legos, boardgames
- Behavioral Health History
  - No prior hx
- T1D-Related History
  - Diagnosed with T1D December 2023
  - A1c at time of referral to BDC Psychology (October 2024) was 7.0%
  - OP5 started ~July 2024

15

Case Study, "Alan", 13M

- **T1D Interdependence Target:**
  - "Identify and address symptoms of low and high BG"
  - "Problem-solve and make decisions about how to manage diabetes"
  - "Teach, communicate, and collaborate with others about diabetes"
  - E.g., Going to bed without dinner if blood sugar was high
- **T1D Interdependence Interventions:**
  - Identify and express emotions felt about having and managing T1D
  - Set up a system to communicate level or acuity of feelings, in the moment
  - Collaboratively agree, ahead of time, how parents can support depending on the level or acuity of feelings

16

Case Study, "Alan", 13M

9,10
- Mom and Dad let me cry on my own, to release the valve and calm down
  - E.g., if school/bbal is not perfect,
  - If my BS is high

7,8
- Mom or Dad JUST listen, and don't say anything

5, 6
- Mom or Dad will offer positive, encouraging, cheerleading, especially around T1D, "It will be Ok."
- XXXX will add on, "I do want help" or "I DON'T want help."
- XXXX will add on, "Can I get your help?"
  - E.g., "I'm dealing with THIS, I'm thinking THIS, but I wondered if I could THAT."

3, 4

1 2
- XXXX can handle on his own!

17

Case Study, "Robert" 14M

- **T1D Referral Concern:** needle phobia as it relates to pump site changes, avoiding diabetes tasks, family conflict around diabetes management
- Social/Academic History
  - Lives in south metro area suburbs with adoptive fathers and twin brother; 7th grade in-person learning
- Behavioral Health History
  - Dx with Autism Spectrum Disorder and dyspraxia
  - Concurrently seeing an occupational therapist for food sensitivity
- T1D-Related History
  - Diagnosed with T1D March 2024
  - A1c at time of referral to BDC Psychology (September 2024) was 8.2%
  - iLet pump started ~June 2024

18

Case Study, "Robert" 14M

- **T1D Interdependence Target:**
  - "Teach, communicate, and collaborate with others about diabetes"
  - E.g., delaying pump site changes due to anxiety/frustration with needles
  - E.g., iLet pump shutting off due to not being charged
- **T1D Interdependence Interventions:**
  - Institute "take 15" breaks to calm down before resuming a pump site change
  - Teach and model collaborative problem-solving in session to find solutions for diabetes-related tasks

19

Late Teen (16-19 yr)

Teen's Job	Adult's Job
Identify and address symptoms of low and high BG	Identify new ways to observe, especially with less face-to-face
Problem-solve and make decisions about how to manage diabetes	Scaffold transition to adult healthcare, college/job, moving out of the home
Teach, communicate, and collaborate with others about diabetes management	

Chiang et al., 2018

20

Case Study, "Allie" 16F

T1D Referral Concern: low treatment adherence, family conflict around diabetes management, keeps diabetes private from friends at school

- Social/Academic History
  - Lives in Colorado Springs with Mom, Dad, and brother; 8th grade in-person learning, switched schools due "condemned building", friends
- Behavioral Health History
  - Hx of depressed mood; seeing an LCSW at school concurrently
- T1D-Related History
  - Diagnosed with T1D December 2019
  - HbA1c at time of referral to BDC Psychology (December 2024) was 11.8%
  - Previously on Tslim X2 Control IQ, switched to MDI's
  - DKA in January 2024

21

Case Study, ”Allie” 16F

- **T1D Interdependence Target:**
  - **“**Teach, communicate, and collaborate with others about diabetes”
  - “Identify new ways to observe, especially with less face-to-face”
  - E.g., CGM alarms turned off, CGM not transmitting data during the school day, CGM data not shared with others
  - E.g., prescribed MDI’s, but no observation by school nurse or family
- **T1D Interdependence Interventions:**
  - Coordinate with RN’s / CDCES to problem-solve sharing CGM with Mom
  - Routine Diabetes f/u visit to re-start the pump

22

Tips for ANY Supporting Adult

- Validate uncomfortable emotions
  - Versus re-directing to health or threatening future acute complications (i.e., “but you have to do this…”)
- Schedule & maintain a consistent, frequent communication plan (e.g., daily check-in)
  - Versus only when something “comes up” or when it is on your mind or you have a free moment
- Use specific, labeled praise to “catch them being good” with positive change
  - Versus giving attention when correcting or disciplining
- Set clear expectations, limits, and positive consequences for behavior you want to increase
  - Versus punishing for unwanted behavior or for the absence of a behavior

23

Tips for ANY Supporting Adult

- Focus on behavior. Handle results as helpful data or information to guide problem-solving.
  - Versus labeling results as “good” or “bad”
- Use Collaborative Problem Solving (DIRT)
  - Define the Problem
  - Identify Possible Solutions
  - Review Pro’s and Con’s of each Solution
  - Try It Out!
- Facilitate small changes that the teen is both motivated to try and that are reasonable
  - Versus expecting a change because they “should know” or “are old enough to do it by now”
- Interdependence is not a linear process
  - Versus expecting current performance based on previous performance

24

QUESTIONS, COMMENTS CONSULTATION?

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25

Common Skin Conditions and Rashes in Community Settings

Grant R. Plost, MD
Assistant Professor of Dermatology
University of Colorado
Children's Hospital Colorado

June 12, 2025

1

Learning objectives

- Recognize common inflammatory skin disease
- Identify common infectious skin disease and understand when school exclusion may be appropriate
- Recognize red flags that require urgent medical evaluation
- Communicate effectively with families about common rashes

2

2

Take home points: Atopic dermatitis (eczema)

- Topical corticosteroids are the mainstay of treatment
  - Twice daily application (before school and at bedtime)
  - Emollients during school
- The associated pruritus can be severe and disruptive to school performance
- Hand eczema is common with handwashing and the Colorado climate
  - Emollients after washing hands
- When to worry? Infection
  - Staphylococcus, Streptococcus, Herpes simplex virus

3

3

Take home points: Urticaria (hives)

- Hives tend to come and go quickly – an episode may last a few weeks
- Mainstay of treatment is non-sedating systemic antihistamines
- Most common causes:
  - Idiopathic, preceding viral infection, medications, food
- When to worry? Anaphylaxis
  - Swelling or tingling of the mouth, tongue, throat
  - Trouble breathing or swallowing
  - EpiPen → emergency department

4

4

Take home points: Arthropod bite reaction

- Difficult (often impossible) to determine the cause of the arthropod bite reaction
- Can be very itchy! Care is supportive with non-sedating systemic antihistamines and topical corticosteroids
- Prevention with bug repellent and clothing
- "Breakfast, lunch, dinner" is classic but the clinical appearance can vary
- When to worry? Almost never
  - Rarely anaphylactic reaction

5

5

Take home points: Molluscum contagiosum

- Molluscum is not dangerous (although contagious)
- Can take 2-3 years to resolve
- Do not recommend restriction of activities for affected patients
- "BOTE" (Beginning of the end) sign: inflamed molluscum are sign of impending resolution
- When to worry? Almost never
  - Rarely secondary bacterial skin infection

6

6

Take home points: Alopecia areata

- Classic presentation is smooth round patches of hair loss on the scalp
- Can have profound psychological impact
  - Making a small accommodation (e.g, hat) can have a huge impact
- Be aware of bullying – burden of visible skin (hair) disease

7

7

Take home points: Herpes simplex virus

- Classic presentation is grouped erythematous vesicles
- Symptoms may precede vesicles
- Contagious until crusted
- Treatment with systemic antivirals
- When to worry?
  - Eyelid involvement
  - Infection of eczema

8

8

Take home points: Impetigo

- Classic presentation is yellow crusted plaques
- Most commonly caused by Staphylococcus
- Contagious
- Sometimes can blister (bullous impetigo)
- Management: Localized (topical antibiotics), Multifocal (systemic antibiotics)
- When to worry?
  - Fever, skin pain, severe blistering

9

9

Take home points: Tinea corporis

- Superficial fungal infection of the skin
- Classic presentation is scaly annular plaque with central clearing
- Treatment is typically topical antifungals
- Contagious
- When to worry?
  - Tinea capitis (involvement of scalp) can lead to hair loss, secondary infection, scarring, lymphadenopathy

10

10

Take home points: Hand Foot and Mouth Disease

- Viral infection caused by enterovirus
- Contagious – advisable to keep at home until blisters have crusted
- Classically involves vesicles/blisters of the hands, feet, oral mucosa
- Less commonly can have widespread blistering
- No treatment other than supportive care
- When to worry? Almost never
  - Rarely can have severe mucosal involvement resulting in dehydration

11

11

Take home points: Measles

- Classically presents with fever, cough, coryza (rhinorrhea), conjunctivitis and then followed by rash 3-4 days later
  - The rash is non-specific and resembles other viral exanthems
- Incidence is increasing due to decrease in vaccination rates
- Very contagious: transmissible for up to 2 hours in an airspace after an infected person leaves the area
  - Incubation period 10 days; Contagious 4 days before and after rash
- Children $\leq$ 5 years are at risk for severe infection and death
- Complications include pneumonia, myocarditis, encephalitis, death
- Vaccination can prevent measles and is extremely effective
- When to worry? rash + fever

12

12

The Kempe Center

Trauma and de-escalation

Dr. Lauren Pryce McCarthy, PhD, LCSW
Assistant Professor of Pediatrics & Psychiatry
Behavioral Health Director, CARE Network

1

Mental health: Trauma & De-escalation

What do you already know about how trauma impacts youth development and behavior?

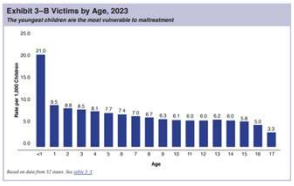
The Kempe Center

2

The Kempe Center

Childhood Trauma – Abuse & Neglect

- In 2023, there were 546,159 children with confirmed cases of child abuse or neglect – or 7.4 per 1,000 children
- 26.6% were under two years
- These are confirmed cases only
- Removal from primary caregivers and community is traumatic for youth



Source: Administration for Children and Families (https://acf.gov/sites/default/files/documents/cb/cm2023.pdf)

3

Other Childhood Trauma

- One in 4 adolescents report some form of exposure to violence
- By age 16, 30.4% of youth reported some exposure to trauma
  - 14.8% were exposed to three or more traumatic events

Copeland et al., 2016: https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2713048

4

Trauma: Impacts Across Domains

Domain	What it looks like
Attachment	Disrupted relationships (friends, caregivers)
Biology	Delays in development Impaired sensation and movement
Affect Regulation	Difficulties with managing mood ←
Dissociation	Impaired consciousness, memory
Behavioral Control	Poor impulse control, increased risk-taking ←
Cognition	Delays in language and learning; impaired memory
Self-Concept	Poor self-image, body-image, identity

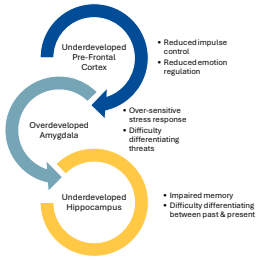
5

Neuronal Growth in Childhood

Newborn **Early Childhood** **Later Childhood**

6

Trauma and the Brain: Impacts



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Trauma and the Brain: Impacts

Increases impact
- Earlier exposure to trauma
- Chronic exposure to trauma
- Relational aspect of trauma

Decreases impact
- Stable, nurturing relationships
- Sense of safety
- Social connection

8

Affect Regulation

Traumatized children have difficulties with
- Regulating moods
- Self-soothing

Emotions can become intense, overwhelming

Sometimes children withdraw when experiencing intense emotion; also, may be emotionally labile

9

Behavioral Control

- Aggression
- Impaired impulse control
- Affect dysregulation
- Difficulties with attention
- Increased risk-taking

10

Pause & Reflect:

How have you seen this show up in your practice setting?

11

De-Escalation: Key Considerations

Safety	Co-Regulation	Skill Scaffolding
Installation and enhancement of internal and environmental safety	Interactive emotion regulation process between child and trusted adult	Starting small to keep things manageable

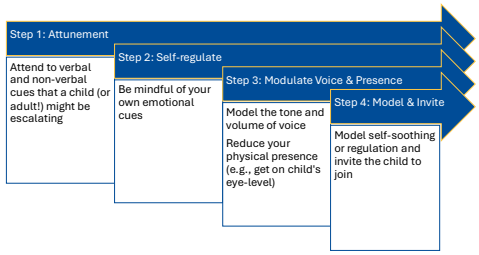
12

De-Escalation: Creating Safety

Create Environmental Safety	Create Internal Safety
• Making exits clear and easily accessible • Reducing anything that might cause overstimulation (noise, light, etc.) • Clean, bright, lack of clutter if possible • Creating a specific safe space or moving to a different space if possible • Bodily autonomy	• Use clear, direct communication • Create predictability wherever possible • Create opportunities for choice wherever possible • Acknowledge and validate emotions • Attend to and recognize verbal and non-verbal cues • Make minimal demands

13

De-Escalation: Co-regulation



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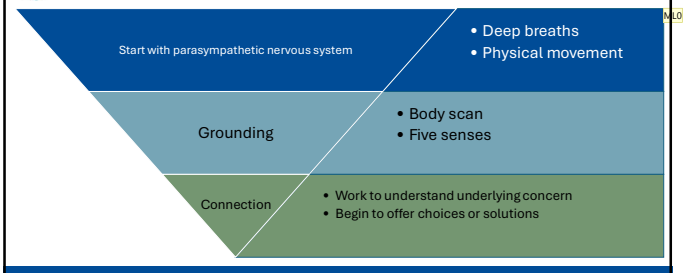
De-Escalation: Skills Scaffolding



15

Slide 15

ML0 Add TIPP skills - reference will learn more later!
McCarthy, Lauren, 2025-05-29T21:13:47.257

Case Example

Virginia is a nine-year-old girl with a history of witnessing domestic violence. During Virginia's early childhood, she and her mother spent periods without consistent housing. At one point, Virginia was removed from her mother's care by the Department of Human Services, but the pair were re-unified within six months.

Virginia visits your office often complaining of stomach and headaches. Virginia's teacher has expressed frustration with her frequent requests to visit your office. Today, Virginia appears fidgety and frequently looks at the door while in the waiting area. You inform Virginia that she has to return to class.

Virginia immediately stands up and shouts, "YOU SUCK" before throwing her chair against the wall. She attempts to run past you, then runs back to the waiting area and begins tearing posters off the wall while screaming and crying.

16

Case Example

- How are you seeing the impact of trauma manifest in Virginia's behavior?
- How might you approach de-escalation in this scenario?
- What steps might have been taken to prevent Virginia's escalation in behavior?

17

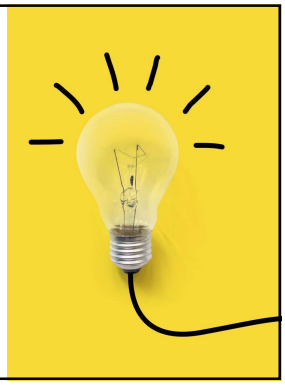
Pause & Reflect:

How will you apply content from today's presentation to your practice?

18

Questions?

lauren.mccarthy@cuanschutz.edu



19

Telephone Triage Case Studies

Presented by the CHCO Pediatric Call Center

Gina Edwards, MSN, FNP-C, RN, BSN
Erin Prucha, RN, BSN, CPN
Julie Klingel, RN, BSN, CPN

Children's Hospital Colorado
Here, it's different.

1

All About the Pediatric Call Center

Gina Edwards, MSN, FNP-C, RN, BSN
Pediatric Call Center
Children's Hospital Colorado

2

What is the Pediatric Call Center?

- Purpose of PCC
  - Established in 1988 under medical leadership of Dr. Barton Schmitt to support Primary Care Providers in our community
  - Provides access to expert pediatric nurses who provide telephone triage
  - Focus on thorough assessment of symptoms
  - Use evidence-based guidelines to provide the correct disposition
  - Educate and empower families for home care
- Benefits
  - Direct families to appropriate level of care and may decrease unnecessary ED/UC visits
  - Encourage contact and follow up with medical home
  - Decrease healthcare costs

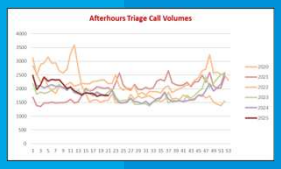
3

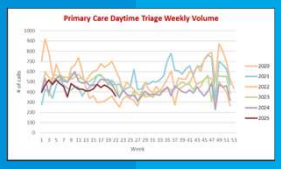
Scope of the Pediatric Call Center

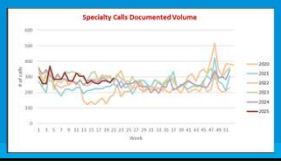
- CHCO Primary Care Clinics Nurse Triage (M-F 0800-1700 and After Hours)
  - Child Health Clinic, Young Mother's Clinic, Special Care Clinic, Adolescent Medicine
- After Hours Nurse Triage for subscribing community practices
  - Providing afterhours telephone triage services for pediatric primary care practices
  - Currently covering for 107 practices in the following states: Montana, Wyoming, Nebraska, Colorado, New Mexico
- Parent Smart Healthline: Community facing Nurse Triage (24/7)
  - Established in 1992
  - Hope is to have the lowest emergency room referral rates in the nation, allowing families to avoid unnecessary visits to the ER
  - Anyone can call the PS Healthline for advice, resources, or support
  - We can triage calls from all over the world
- CHCO Subspecialty Answering Service (After Hours)
  - Urology, ENT, Barabara Davis Center

4

Pediatric Call Center Call Volumes







5

2024 Call Volume

Account	970065	970065	970070	970070	970070	970080	970080	970065	970083	totals
Month	Community Lines Inbound Calls	Afterhours Specialty Calls	Subscribing MD calls	Subscribing PS calls	Specialty Triage Calls	Parent Smart Calls (non-subscribing outbound)	PCP referral only	Daytime Inbound	Daytime Outbound	
January	4730	2484	5454	1784	104	2031	15	3993	2215	22810
February	4018	2062	5114	1861	97	1497	15	3480	2180	20324
March	3968	2158	5414	1702	88	1508	12	3695	2176	20721
April	3819	2160	4583	1640	116	1434	9	3834	2173	19768
May	3841	2127	4663	1668	108	1453	7	3685	2028	19580
June	3285	1943	4033	1399	139	1230	12	3053	1526	16620
July	3208	1778	4039	1261	126	1254	17	3704	1689	17076
August	3436	1809	4123	1455	116	1252	4	4161	1751	18107
September	3496	2068	4235	1538	85	1259	6	3818	1768	18273
October	3547	1880	3995	1462	84	1293	6	4071	1861	18199
November	3945	2069	4926	1750	98	1396	4	3049	1568	18805
December	4858	2224	5641	2179	133	1806	6	3519	1883	22249
YTD	46151	24762	56220	19699	1294	17413	113	44062	22818	232532

6

What We Do

- Our telephone triage guidelines were created by telehealth pioneer Dr. Barton D. Schmitt, professor of pediatrics at University of Colorado School of Medicine. They are currently used world-wide with a total of 355 afterhours triage and 259 pediatric office hours triage guidelines.
- All calls from PS and PCP practices are prioritized into 'que' based on severity of symptoms.
- All PCC nurses go through lengthy training to be familiar with the guidelines.
- A special triage software is used to thoroughly triage each call.
- All call documentation is entered into the child's medical chart and/or faxed to their doctor's office.

7

ChildrensMD Mobile App

- A **free** mobile app for community use that allows caregivers and families ability to look up symptoms and determine what action is needed, based on our PCC guidelines.
- Home care tips and advice is available for any illness or injury that can be treated at home.
- **Additional Perks:**
  - Pediatric OTC medication dosage tables
  - Pictures to help identify symptoms (e.g. rashes)
  - First-aid illustrations to help you act immediately, if needed
  - Emergency and Urgent Care location finder
  - Access to 24/7 nurse hotline

childrenscolorado.org

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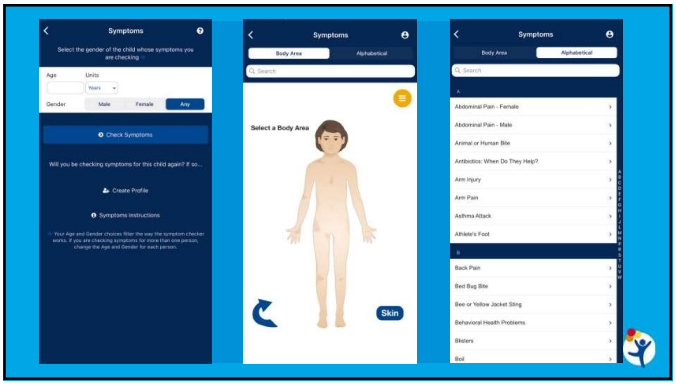

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ChildrensMD
Free mobile app

- Symptom checker
- Child dosage tables
- Access to 24/7 nurse hotline
- Emergency and Urgent Care location finder

ChildrensMD
Children's Hospital Colorado

Scan the appropriate QR code for your device to download the free mobile app or visit childrenscolorado.org/ChildrensMD

iPhone Android

This QR code can be sent to parents via email during our triage call

10

When in doubt, call the ParentSmart Healthline!

Call 24/7 at 720-777-0123

11

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Head Injuries

Erin Prucha, RN, BSN, CPN
Pediatric Call Center
Children's Hospital Colorado

13

Objectives

- Review key points of triaging head injuries in school settings
- Recognize and identify red flag symptoms of head injuries in children <2 and >2
- Review head injury case studies utilizing the Children's MD app
- Management of head injuries in the school setting

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Head Injury Initial Assessment Questions

- MECHANISM: "How did the injury happen?" "Was the injury witnessed or unwitnessed?"
  - Height of fall (over 5 ft if >2, over 3 ft if <2)
  - High impact object (ie: baseball bat, golf club)
  - Surface (grass/carpet vs concrete)
  - Helmeted vs un-helmeted
- WHEN: "When did the injury happen?"
  - Minutes ago or hours ago
- NEUROLOGICAL SX: "Any LOC/seizure/vision changes?"
- MENTAL STATUS: "Does the child know who he is, who you are, and where he is? What is the child doing right now?"
- LOCATION: "What part of the head was hit?"
- SCALP APPEARANCE: "How does the scalp appear? Any lumps/bumps/dents? Bruising? Bleeding?"
- SIZE: For any cuts, bruises, or lumps, ask: "How large is it?"
- PAIN: "Is there any pain?"
  - Excessive crying, unable to calm down
  - Severe headache, stiff neck, neck pain

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Types of Head Injuries

- SCALP INJURY:
  - Most head injuries only damage the scalp
  - 'Goose eggs' occur with minor injuries as there is a large blood supply to the scalp
- SKULL FRACTURE:
  - Only 1-2% of children with a head injury will get a skull fracture
  - Most have no symptoms, except a headache where they were hit
  - Most skull fractures occur without injury to the brain and heal easily. (Exception: skull fracture in children <12 mo have a higher risk of intracranial injury.)
- CONCUSSION:
  - An injury to the brain that changes how the brain wo.rks. Usually caused by a sudden blow or jolt to the head causing the brain to shake
- BRAIN TRAUMA:
  - Potential structural damage to the brain
  - Always in the presence of acute neurological symptoms

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Triage Pearls for Head Injuries

- Age Specific Considerations:
  - Children under 2
  - Teens might under-report symptoms
- Vomiting:
  - Vomiting once immediately after a head injury is common and usually not medically important.
  - Delayed vomiting more than 1 hour after the head injury always needs to be evaluated.
  - Our triage guidelines recommend children who have vomited 2 or more times following a head injury for evaluation in the ED.
- Signs of Major Head Trauma:
  - Early symptoms: AMS, watery or blood-tinged fluid dripping from nose or ears when child is not crying (CSF fluid)
  - Late symptoms: Racoon eyes, pupil size

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Case Study #1 - "The Wobbly Toddler"

A 20 mo old boy found crying on the floor of daycare next to his scooter. The teacher's aide calls you.

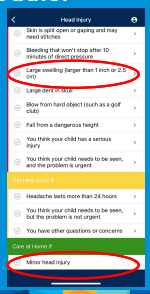
At the time of call, he is smiling, standing up while stacking blocks. Teacher's aide says the injury occurred 30 mins ago, unwitnessed. She thinks he fell off his scooter (1 ft down) onto the laminate floor. He is rubbing his head occasionally and saying 'owie.' There is a 1 in L frontal hematoma that is red. He is moving his head/neck normally, eyes are tracking appropriately.

18

Case Study #1 - "The Wobbly Toddler"

Minor Head Injury: helping you decide

- Though unwitnessed and onto harder flooring, overall toddler was well-appearing and acting normally at the time of call
- Frontal hematoma was 1 inch – okay to monitor



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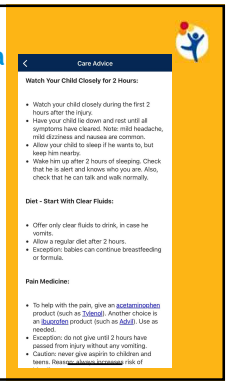
Management of Minor Head Trauma

- Observe closely for 2 hours
- Wound care as needed
- Lie down and rest until symptoms have resolved
- Use a cold pack or ice bag for any swelling, 20 mins at a time, repeat in 1 hour.
- Offer clear fluids
- Motrin or Tylenol can be administered for headaches. Best to wait 2 hours after injury to give pain medications to avoid upsetting the stomach. Aspirin is never recommended after a head injury due to an increased risk of bleeding.
- For young children if injury occurs before nap time or bedtime, it is recommended to observe the child during sleep (keep in the same room as adult) and wake child after 2 hours of sleep to check on behavior.



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Case Study #2 - "The Playground Header"

A 7 yo girl fell from the monkey bars (>5ft) onto mulch. The recess aide calls you.

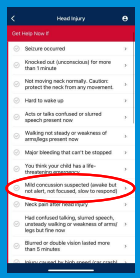
At the time of call, she is calm and quiet. Aide says she fell 20 mins ago. Fall was witnessed by another student, fell onto her head. No LOC, immediately cried. Now c/o headache. She is alert, able to walk but answering questions a bit slower, seems spaced out. She has some mild dizziness w/ standing and feeling nauseous.

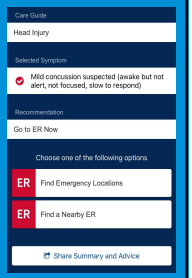
21

Case Study #2 - "The Playground Header"

Mild Concussion Suspected: helping you decide

- Child is seeming dazed, slow to respond
- Fall from a dangerous height, >5ft
- Dizziness with standing
- Mild nausea and headache





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Case Study #3 - "The Soccer Collision"

A 15 yo boy went head-to-head with another kid during a soccer game. A staff member calls you.

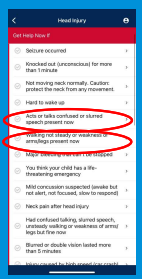
At time of call, he is awake but confused. Injury occurred 1 hr. ago, he had LOC for 30 seconds. Able to walk off the field but had some slurred speech and dizziness. Vomited x 2. He doesn't remember what happened and seems very emotional.

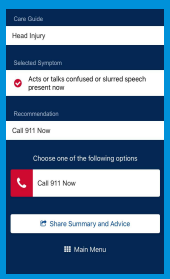
23

Case Study #3 - "The Soccer Collision"

Major Head Injury/Concussion Suspected: helping you decide

- Teen had LOC <30 secs
- Injury occurred 1 hr ago and still acting confused, doesn't remember what happened, having emotional lability
- Had slurred speech and dizziness when walking
- Vomited x 2





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Minor Trauma

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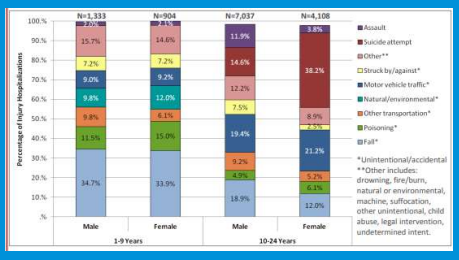

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Objectives

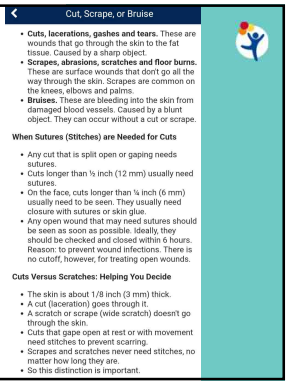
- Review key points of triaging minor injuries in school settings.
- Management of minor trauma injuries in the school setting and recognizing when to refer children to the appropriate higher level of care.
- Review minor injury case studies and how to utilize the Children's MD app

27

Cuts, Scrapes or Bruises

Cuts vs Scratches: Helping you decide

- The skin is 1/8in (3mm) thick (between 2 and 3 stacked quarters)
- A laceration goes through at least 1/8in of skin
- A scratch doesn't go through
- Scrapes and scratches never needs stitches, no matter how long they are



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Cuts, Scrapes or Bruises

- Cuts anywhere on body >1/2in need sutures
- Cuts on the **face** >1/4in need sutures or skin glue (diameter of a dime)
- Any open wound (goes through multiple layers of skin) should be checked and closed ideally within 6 hours to prevent infection
- Cuts that gape open at rest or with movement need stitches to prevent scarring

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Cuts, Scrapes or Bruises

Outcome

- School nurse called parent who picked child up and brought to the ED.
- Received stitches within 6 hours, child doing well.

30

Tooth Injury

Permanent tooth

- **Emergency**! Tooth needs to be reimplanted within 2 hours to maintain integrity of tooth
- Dental office is best place to have child seen, NOT the emergency room
- If more than 30min away from dental care, try to replace the tooth. Put it back in the socket before going to the dentist

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Tooth Injury

If not able to put the permanent tooth back in its socket, it is very important to keep the tooth moist. **Do not let it dry out.**

- Transport the tooth in milk or saliva. Milk is best.
- Milk transport
  - Place tooth in a small plastic bag with some milk. Put the plastic bag in a cup of ice.
  - Place the tooth in a cup of cold milk
- Saliva transport
  - For older kids only (> 12yrs)
  - Put tooth inside child's mouth. Be careful not to swallow it
  - Put tooth in a cup and have child spit into cup to cover tooth and keep moist

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Tooth Injury

Important points

- Knocked out permanent tooth is an emergency
- Knocked out baby tooth cannot be reimplanted, follow up with dentist when able
- Care advice for minor dental injury
  - For pain, put a piece of ice or popsicle on the injured gum/tooth for 20 min
  - Tylenol or Motrin can be given as needed for pain
  - For any loose teeth, offer a soft diet. Avoid any foods that need much chewing. You can go back to a normal diet in 3 days. By then, the tooth should be tightened up
  - Tooth pain most often goes away in 2 or 3 days
  - Contact dentist if tooth becomes dark color, having increased pain, cold causes tooth pain.

Tooth Injury

Types of Tooth Injuries

- **Loosened Tooth.** May bleed a little from the gums. Usually tightens up on its own.
- **Displaced Tooth.** Usually pushed inward. Needs to be seen.
- **Chipped Tooth.** Minor fracture with small corner of tooth missing tooth. The fracture goes to the dentin (yellow color), not the pulp (red color). Not painful. See dentist during office hours.
- **Fractured Tooth.** The fracture goes down to the pulp. The pulp is where the blood supply and nerves to the tooth are located. The main finding is a red dot or bleeding in the center of the tooth. Very painful. Needs a root canal to save the tooth.
- **Knocked-Out Permanent Tooth**. Also called an avulsed tooth. A dental emergency. Needs to be re-implanted within 2 hours.
- **Knocked-Out Baby Tooth.** It cannot be re-implanted. See during dental office hours.

Symptoms

- The main symptom is pain.
- Minor bleeding from the gums may occur.

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Arm Injury

FOOSH – fall onto outstretched hand

- When a child falls onto their outstretched hand, the force of impact travels up the arm and can injure the elbow joint.
- This can cause a variety of injuries, including:
  - Fractures – radial head fracture, supracondylar fracture
  - Dislocations
  - Ligament sprains or tears
  - Soft tissue injury – bruises, contusions

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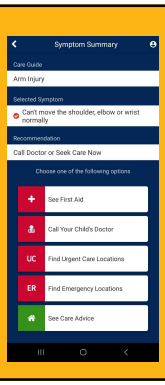
Arm Injury

How to use Children's MD app to support your decision making

1. Choose Arm Injury guideline
2. Symptom is child cannot move her elbow normally as she cannot straighten her elbow during your exam
3. Disposition – call parents to seek care now
   - Urgent care could be appropriate in this case. Can use the "Find Urgent Care Locations" to help parents select the best place for higher level care. Confirm x-ray is available at location of choice.
   - Use the 'See First Aid' button to perform immediate first aid until parents arrive



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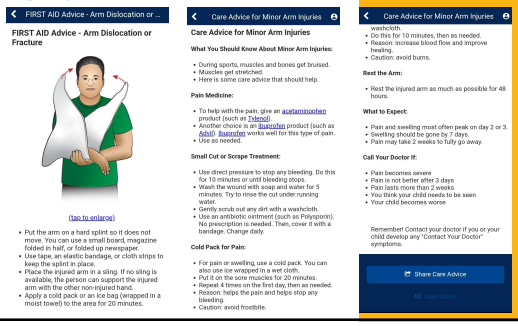
Arm Injury First Aid and Care Advice



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Here, it's different.

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Tracheostomy: It Takes a Team

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Ventilator Care Program Clinical Specialty Coordinator

Children's Hospital Colorado

1

Indications for a Tracheostomy

2

What is a Trach?

A tracheotomy is a surgical procedure that creates an opening in the neck and windpipe (trachea). A tube is then placed in the opening to keep it open so air gets to the child's lungs. The terms tracheotomy (the surgery), tracheostomy (the hole), and tracheostomy tube (the actual tube) are all sometimes referred to as the "trach."

3

Indications for a Tracheostomy

Alterations in upper airway anatomy
- •Congenital
- •Acquired
- •Trauma

Need for chronic ventilation
- •Lung disease
- •Muscle weakness/paralysis
- •Alteration in neurological function
- •Alterations in spinal cord function

4

Subglottic Stenosis

- A narrowing of the larynx usually at the level of the cricoid cartilage.
- Congenital: Congenital subglottic stenosis is usually not diagnosed until the airway is challenged: i.e. respiratory illness.
- Acquired: Caused by long-term intubation
- For significant subglottic stenosis a tracheostomy or tracheal reconstructive surgery may be indicated.

5

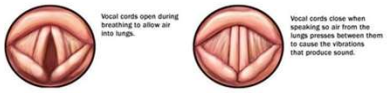
Tracheomalacia

- Tracheomalacia is when the tracheal cartilages collapse during the respiratory cycle.
- Can be more pronounced during illness.
- Diagnosed with a bronchoscopy.
- Severe tracheomalacia may require tracheostomy and sometimes ventilation.

6

Vocal Cord Paralysis

- Vocal cord dysfunction is usually the consequence of other problems such as surgical trauma to the laryngeal nerve during cardiac surgery, Arnold-Chiari malformation of the brain stem, or prolonged intubation.
- Sometimes dysfunction will resolve spontaneously
- Tracheostomy is sometimes required for bilateral vocal cord paralysis



Adapted from: https://ent-surgery.com.au/throat-surgery/vocal-cord-paralysis/

7

Other Alterations in Upper Airway Anatomy

- Syndromes
  - Pierre Robin Syndrome
  - Treacher Collins Syndrome
  - Golden-Har Syndrome
  - CHAOS (congenital high airway obstruction syndrome)
- Trauma: Facial/Neck

8

Indications for Chronic Ventilation

9

Bronchomalacia

- Collapsing of the airways below the trachea
- Children with bronchomalacia may need a trach and ventilation

10

Bronchopulmonary Dysplasia (BPD)

- BPD is a chronic lung disease resulting from acute respiratory disease in the neonatal period.
- Risk factors include prematurity, high inspired oxygen concentrations, positive pressure ventilation, and PDA.
- BPD results in bronchiolar and interstitial changes resulting in thickened walls and fibrosis.
- BPD, tracheomalacia, and bronchomalacia are often comorbid

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Congenital Diaphragmatic Hernia (CDH)

- Abnormal development of the diaphragm during fetal development causes one or more of the abdominal organs to herniate through the diaphragm
- Results in underdevelopment of the affected lung
- Surgical intervention in the first few hours to days of life is required
- Severe cases may result in need for chronic ventilation

Adapted from: https://www.mountsinai.org/health-library/diseases-conditions/diaphragmatic-hernia

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Other Indications for Chronic Ventilation

- Muscle weakness/paralysis
  - Duchenne's muscular dystrophy
  - Spinal muscular atrophy (SMA)
  - Guillain-Barre syndrome
  - Transverse myelitis
- Alterations in neurological functioning
  - Traumatic brain injury
  - Brain tumors
- Alterations in spinal cord functioning
  - Spinal cord injuries
  - Spinal cord tumors
- Impaired airway clearance/secretion management

13

Nursing Priorities

14

Go Bag: Supplies that Must be with Student at all Times

- Extra tracheostomy tubes with obturator
  - One of the same size
  - One half a size smaller
- Syringe for cuffed trach
- Extra trach ties
- Scissors/chain cutters
- Lubrication packets
- Saline (if ordered)
- Suction machine
- Suction catheters
- Self inflating bag
- Pulse ox machine and probe (if ordered)

15

Humidification

- Proper humidification is essential to the tracheostomy dependent child
- Without proper humidification a mucus plug is inevitable
- Humidification at school:
  - Heat Moisture Exchanger (HME)
  - Ventilator
  - Saline for instillation if indicated

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Suctioning

- Suction Machine
- Gloves
- Suction Catheter
  - Length
  - Diameter
- Saline (not for routine use)
- Suction at least every 12 hours and as needed
- Monitor quantity and quality of secretions
- Important to suction to ordered depth to effectively clear secretions and prevent airway trauma

17

Preventing Emergencies

- Know the child
  - History: Why do they have a trach?
  - Baseline status
- Equipment: Be familiar with use and maintenance
  - Ensure student always has emergency equipment with them (go bag)
- Monitor the child's status
  - Awake, alert, trained caregiver 24/7
- Note changes to status
  - Secretions
  - Oxygenation
  - Position of trach
- Provide Routine care
  - Suctioning
  - Proper humidification

18

When Prevention Does Not Work

- **BE SYSTEMATIC WHEN ASSESSING FOR A PROBLEM**
  1. Is the trach in the stoma?
  2. Is the trach patent?
     - If child is stable attempt to suction trach. Saline can be used if secretions are thick.
     - If child does not improve with suctioning, is not stable, or mucus plug is suspected, change the trach.
       - IT IS NEVER WRONG TO CHANGE THE TRACH! **WHEN IN DOUBT CHANGE IT OUT**
  3. Start manual ventilation: use self inflating bag
- **Call 911 if student is not improving or actions do not solve the problem**
- **Monitor CV status and start CPR if it becomes indicated**

19

Tracheostomy Complications

20

Mucus Plugs

Mucus plugs are secretions that are thick and plug the tracheostomy tube. This can occur from lack of humidity or illness. These can cause the tracheostomy tube to completely occlude leading to a medical emergency.

Preventing a plug = ***HUMIDIFCIATION***

21

Skin Breakdown

Some redness is to be expected, but careful assessment, routine repositioning and thorough cleaning usually will prevent it from becoming a problem.

22

Skin Breakdown

Yeast is a common finding in children with tracheostomy tubes and is characterized by a red area with a raised pinpoint rash.

Keeping skin dry and clean is the best prevention for yeast overgrowth.

23

Granuloma

Granulomas are overgrowth of scar tissue often caused by excessive moisture and/or friction at the trach site

Keeping the trach site clean and dry and reducing friction will help prevent granulomas from forming

24

Granuloma?

Some irregular skin folds around the stoma are normal and may be confused with granulomas

25

Developmental Support

26

One-way valve (speaking valve)

- One way valve placed on trach or in ventilator circuit that allows inhalation through the trach but closes during exhalation, forcing air out of the mouth and nose
- Helps facilitate speaking and swallowing and may restore physiological PEEP
- May be used as a tool to progress toward decannulation
- **Must be used under direct supervision of a trained caregiver**
- Use may be paused or limited during acute illness
- Remove valve to suction or for signs of acute respiratory distress
- Must be removed for sleep

27

Tracheostomy Cap

- Placed directly on tracheostomy tube
- Occludes tracheostomy tube to facilitate inhalation and exhalation through mouth and nose
- Often used as a tool to progress toward decannulation
- **Must be used under direct supervision of a trained caregiver**
- Use may be paused or limited during acute illness
- Remove cap to suction or for signs of acute respiratory distress
- Must be removed for sleep

28

Implications for School Nurses

29

Know your student

- Why do they have a trach?
- Do they have the supplies they need at school?
- Are you familiar with equipment and how to use it?

Skill knowledge

- Following delegation guidelines
- Ensuring skills are within scope of practice
- IHP development

30

Questions?

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June 2025

Care of the Student with a Tracheostomy in the School

Care Coordination and Delegation

Erin Bluth, BSN, RN, NCSN

Children's Hospital Colorado

1

Disclosures

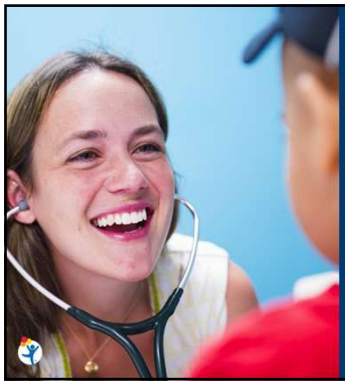
Erin Bluth has no disclosures to note.

2

Objectives

- Identify strategies used to plan effective care coordination and delegation for the student with a tracheostomy in the school setting
- Describe process required to ensure safe and competent performance of delegated tasks by UAPs

3



How do we make this happen?

- Plan, Communicate, Meet
- Develop IHP with parent and provider
- May need ROI
- Models of Care May Include:
  - Delegation of School Staff
  - Private Duty Nursing Services
  - District/Program may hire for Student

4

CO Nurse Practice Act

CO Department of Education Delegation Considerations

CO Nurse Practice Act

The delegating nurse shall be solely responsible for determining the required degree of supervision the delegatee will need, after an evaluation of the appropriate factors which shall include but not be limited to the following:

(a) The stability of the condition of the patient;
(b) The training and ability of the delegatee;
(c) The nature of the nursing task being delegated; and
(d) Whether the delegated task has a predictable outcome.

CDE Delegation Considerations

Delegation is determined on case-by-case basis by the professional RN

- ❑ Scope of RN practice
- ❑ Scope of RN skills, knowledge, ability?
- ❑ Does task require an order
- ❑ Routine, repetitive nature of the task
- ❑ Is the RN able to provide appropriate and adequate supervision
- ❑ Factor in district policies, protocols, and standards
- ❑ Additional considerations on CDE website

5

5

Delegation: What can we do?

- Emergency Tracheostomy Changes- Yes
- Manual Resuscitation with Bag- Yes
- Trach tube Suctioning- Yes
- Bulb or Yankauer Suctioning-Yes
- General Tracheostomy Care-Yes (Rarely done during the School Day)
- Ventilator Management-No

6

Delegation – How do we begin?

1. Meet with the school team
2. Identify staff and back-up
3. Plan times to delegate by task

7

Delegation Tips

- Determine level of comfort among school staff
- Choose one procedure at a time i.e. suctioning during one session and emergency trach change another session
- Review procedure guidelines
- Set a schedule for training and delegation
- Consider the student's day from start to finish
- Establish system for documenting all training, delegations, and supervisions

8

More Delegation Tips

- Demonstrate the procedure as many times as needed
- Utilize training tools such as videos and trach training doll
- When delegatee is ready, return demonstrate
- Remember as the delegating RN you do not have to complete the delegation until you feel the delegatee has demonstrated competency!

9

Supervision

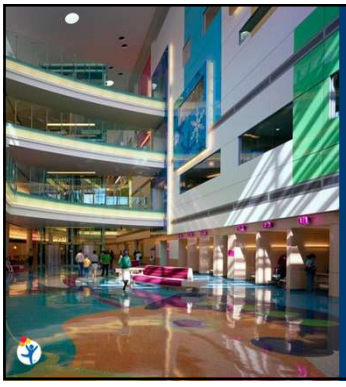
- Determine frequency of supervision visits
- This may vary depending on the competency and confidence (and the stability of the student)
- Periodic trainings for the entire delegatee group using training tools

10

Time and Patience

- Tracheostomy training and delegation takes time
- Remember to share this with staff and family in preparing for the return to school
- Consider need for back-up delegated staff even with a PDN
- Remember the Transportation Department!!

11



Infection Control and Privacy

- Ensure access to and proper use of PPE, such as gloves
- Clean vs sterile procedures
- Move to separate area when suctioning, ensure student privacy

12

Questions???

13

Resources

CO Nurse Practice Act:
https://dpo.colorado.gov/Nursing/Laws#:~:text=The%20Nurse%20Practice%20Act%20defines,on%20the%20present%20curriculum%20criteria

CDE Training and Delegation Resources:
https://www.cde.state.co.us/healthandwellness/nurse_delegation

Children's Hospital Colorado - School Nurse Resources:
https://www.childrenscolorado.org/community/community-health/school-health/school-nurse-resources/

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JUNE 13, 2025

Catheterizing in the School Setting

Knowing the in's and out's

Marguerite Korber, CPNP
Senior Instructor
Department of Urology
Children's Hospital Colorado

1

Financial Disclosure

I have no financial disclosures

2

Objectives

- Pathophysiology of micturition
- Techniques to attain continence
- Describe clean intermittent catheterization
- Review catheterization products
- Identify goals of continence procedures
- Trouble shooting catheterization in school

3

Physiology of Urination

4

Neural Control of the Bladder

Two discrete phases of micturition:

- Storage
  - contraction of the striated sphincter (somatic innervation (voluntary))
  - contraction of smooth muscle sphincter (sympathetic innervation (involuntary))
  - inhibition of detrusor activity (sympathetic innervation)
- Emptying
  - relaxation of the striated sphincter (somatic innervation (voluntary))
  - relaxation of the smooth muscle sphincter and opening of the bladder neck (sympathetic innervation)
  - detrusor contraction (parasympathetic innervation (involuntary))

5

Nerve innervation in bladder filling and emptying

6

Attaining continence

- Timed voiding – every 2-3 hours during the day
- Medication – anticholinergic medication
- Catheterization – Clean Intermittent Catheterization
- Continence procedure options

7

Clean Intermittent Catheterization (CIC)

- Temporary insertion of a catheter into the bladder using clean (not sterile) technique
- Clean = washing hands and area to be catheterized
- Just as safe as sterile intermittent catheterization
- King et al. (1992) compared SIC to CIC with 23 patients in each group. No difference in development of UTI, bacteriuria or fever between two groups.

8

CIC Continued

- Catheters may be washed and re-used or disposed of after each use
- Lavallee, et al. (1995) compared hydrogen peroxide, vinegar, dishwashing detergent, and tap water to clean catheters contaminated with Pseudomonas and E. coli. They concluded that rinsing and drying catheters immediately after use was most effective at reducing bacteria to very near zero.

9

Who Needs CIC?

- Neurogenic bladder:
- Spinal Cord Injury
- Spinal Defects (spina bifida, tethered cord)
- Muscular Sclerosis
- Transverse myelitis
- Urine retention

10

Why CIC?

- CIC helps to completely empty the bladder, which:
  - Decreases urinary tract infections
  - Reduces incontinence episodes
  - Prevents urinary tract damage

11

How Often?

- CIC is usually performed every 3-4 hours in children, or about how often we would expect them to void
- Frequency is prescribed by health care provider

12

Colonization vs Infection

- Asymptomatic Bacteriuria (colonization)
  - <100,000 cfu/ml and/or multiple colony types
  - Colonization occurs in most/all CIC patients
    - Long-term catheterization: 3-6 weeks
    - Clean intermittent catheterization: 2-3 months
  - Prophylactic antibiotics are not indicated
  - Antibiotics limited to symptomatic UTI only
  - Periodic screening with urine culture not indicated

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Catheterization

Via Urethra

Via Mitrofanoff

14

Continence procedures

Urine continence

- Mitrofanoff with/without bladder augmentation

Bowel continence

- ACE - Antegrade Continence Enema
- MACE - Malone
- Chait tube

15

Goals of continence procedures

- Improved continence
- Increased independence
- Enhanced self-esteem
- Social acceptance

16

Mitrofanoff

- A non-refluxing catheterizable channel to the bladder created from small bowel or appendix
- Most often exits the skin at the umbilicus
- Often coupled with bladder augmentation (increasing the size of the bladder with augmented tissue)

17

Indications

- Neurogenic bladder
- Non-catheterizable urethra
- Sensate urethra
- More discrete for child needing assistance
- Decreased manual dexterity
- Difficult transfer from wheelchair

18

Antegrade Continence Enema (ACE)

- A non-refluxing catheterizable channel to the cecum providing antegrade colonic lavage to empty the bowel
- Created from appendix (if available) or small bowel
- Stoma may be found at umbilicus or lower abdomen

19

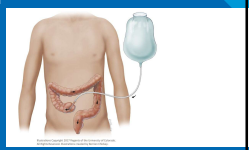
Indications

- Neurogenic bowel
- Congenital anomalies
- Fecal incontinence
- Severe constipation
- Aged 5+
- Independence
- All conservative measures fail
  - diet modifications, laxatives, enemas or suppositories

20

ACE Procedure

- Appendix is folded back on itself OR small bowel is resected and tubularized
- Cecum is wrapped around the base of the tube as a continence mechanism
- Tissues are overlapped around an 8F or 10F catheter
- Cecum is affixed to abdominal wall
- Stoma created



21

ACE Flushes

- Daily enema
- BM Q 24 hr
- Gravity bag
- 30-60 min
- Use toilet
- H_20 or saline
- +/- medications

22

Returning to school After Mitrofanoff

- The child will be able to return to school when he/she feels ready and is off narcotics
- A catheter will be inserted into the Mitrofanoff to keep it open for 3-4 weeks after surgery
- A suprapubic catheter may also be in place to allow the bladder to heal
- Catheters will be connected to collection bag or routed to diaper to allow urine drain freely
- After 4 weeks, the child will be able to catheterize intermittently

23

Returning to School- After ACE

- Inpatient stay is usually 3-5 days
- Child will be able to return to school when he feels ready and is off narcotics
- Stoma requires daily wound care for 5 days
- Catheter will be in place for 4-6 weeks or until the follow up appointment
- Daily catheterizations are necessary to keep the stoma open even if a flush isn't planned for that day

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Indwelling Catheters

Some children will come with an indwelling catheter – urethrally or in Mitrofanoff.

Catheters can be clamped with a plug, clamps or folded and tied with a rubberband

Releasing urine on schedule the same is one would with a cathing schedule

Does not require a sterile field, Betadine. Simply release the plug/clamp and allow urine to drain into toilet, diaper or collection tool, then re-clamp

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Catheters

- Straight
- Coudé
- Hydrophilic
- Closed system

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Step by Step Catheterization

- Assemble supplies
- Wash hands with warm, soapy water. Rinse and pat dry
- Position child (toilet, wheelchair, supine)
- Separate labia/retract foreskin and clean skin/stoma with wet wipe
- Lubricate catheter, if necessary
- Gently insert catheter into urethra until urine flow begins
- If resistance met at sphincter, keep catheter in position until sphincter fatigues, then continue inserting catheter
- Drain bladder
- When urine stops flowing, slowly retract catheter. If more urine is seen, continue draining bladder
- Remove catheter from urethra or stoma

27

Considerations

Wheel chair bound - accessibility
Required assistance vs independence
    IEP, cathing help, schedule
Developmental capacity
Visit with school nurse for outline of program

28

Tips for CIC School Care

Set up outline with the family

- Tips and tricks they know for child
- Review common issues with specific child's site, cathing technique
- Encourage child to participate in cathing if age and developmentally appropriate
- Always have plenty of supplies
    - multiple catheter as well as 1 size below current cathing size
    - Lubricant
    - Sink for child to wash hands if independent
- Set up cathing schedule at school and stick to it
- Private location for child to catheterize if independent

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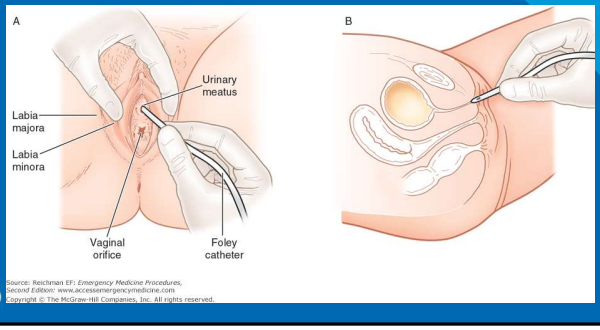

Source: Reichman EF: *Emergency Medicine Procedures*, Second Edition: www.accessemergencymedicine.com

30

Tips for Urethral Catheterization - Female

- Set up all supplies for easy access
- Work to visualize the anatomy and urethral meatus first – pull forward rather than out
- Can consider rolling up a towel and placing under the child's bottom/sacrum for leverage
- Identify the clitoris and make sure not pushing catheter into it
- Pull up on the clitoral area and mons pubis to decompress tissue in the area

31

Tips for Urethral Catheterization (cont)

- If insert catheter and no urine return, leave catheter in that location – this can act as a locator for the vagina and help avoid insertion there again
- Have a second catheter available if miss with the first
- Can consider use of a coude catheter
- If meeting resistance at the sphincter, stop and have the child take a deep breath

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Trouble Shooting

Bladder spasms

Anticholinergic medication

Pain or discomfort

- Tylenol/Motrin
- Consideration for a smaller catheter for a period of time
- Consideration for an indwelling catheter for 1 week

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Trouble Shooting cont.

Leaking of urine

drainage bags, pads or diapers

increase CIC, increase bladder flushes

anticholinergic medication

Stoma stenosis – difficulty passing catheter

- Have a smaller catheter on hand
- Change patient position
- Insert a smaller catheter and tape to skin, drain to diaper or bag.
- Can consider catheterization urethrally if no surgeries have been performed on the urethra
- If catheter cannot be inserted, go to Urology Clinic or Emergency Room

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Trouble Shooting cont.

White flecks in urine

- Do not panic
- Debris from bladder can be seen especially with a history of a bladder augmentation
- Inform family

Blood on catheter or in urine

- Do not panic
- Can be secondary to tissue trauma from cathing or bladder irritation
- Are there other symptoms?
- Inform family and they can follow up with PCP or Urologist if needed

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Thank you for your time!

Marguerite Korber, CPNP
Urology

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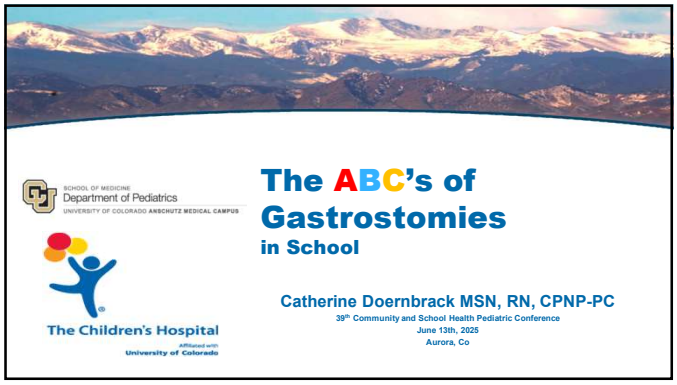
SCHOOL OF MEDICINE
Department of Pediatrics
UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS
The Children's Hospital
Affiliated with University of Colorado
The ABC's of Gastrostomies in School
Catherine Doernbrack MSN, RN, CPNP-PC
39th Community and School Health Pediatric Conference
June 13th, 2025
Aurora, Co

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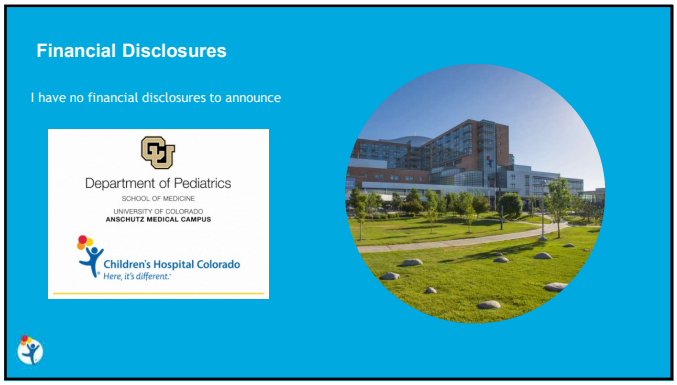
Financial Disclosures
I have no financial disclosures to announce
Department of Pediatrics
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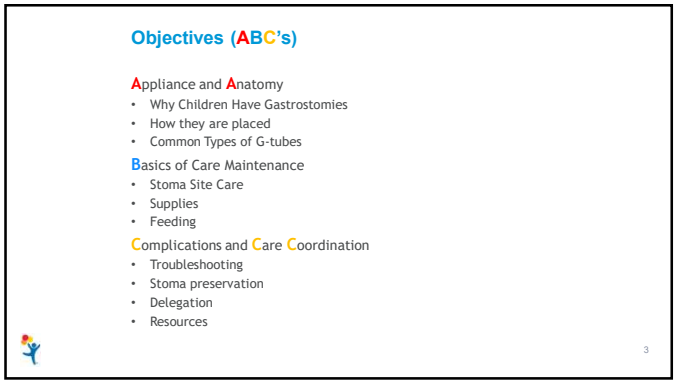
Children's Hospital Colorado
Here, it's different.

2


Objectives (ABC's)
Appliance and Anatomy
• Why Children Have Gastrostomies
• How they are placed
• Common Types of G-tubes
Basics of Care Maintenance
• Stoma Site Care
• Supplies
• Feeding
Complications and Care Coordination
• Troubleshooting
• Stoma preservation
• Delegation
• Resources
3

3

Why Children Have Gastrostomies (G-tubes)

- Gastrostomies provide nutrition and hydration necessary for growth and development when a child does not have the ability to do so safely or adequately by mouth
- Used for long-term feeding supplementation > 3 months duration
- Children require g-tubes for a variety of reasons
  - failure to thrive
  - Aspiration
  - anomaly of the GI tract
  - fundoplication surgery
  - poor oral skills
  - medication compliance

4

Placement of a Gastrostomy

- Open, laparoscopic, or endoscopic procedure
- Typically involves suturing the outside of the stomach to the inside of the abdominal wall to facilitate tract development

5

Long Gastrostomy Tubes

- Mic
- Peg
- Foley (temporary)

6

The Balloon Buttons

Features

- Low profile skin level device
- Made of clear silicone
- Internal balloon
- External anti-reflux valve
- Extension tubes lock into place
- Extension tube for feeding and venting
- changed at home every 1-6 months.

7

Jejunostomy tubes (J-Tubes) Gastrojejunal Tubes (GJ-Tubes)

Jejunostomy Tubes J-tube

- J-tubes go directly into the jejunum(first part of small intestines)
- Placed to help with feeding intolerance
- Never give a bolus feed through a j-tube, only slow continuous feeds

Gastrojejunal Tube GJ-Tube

- GJ tubes go into both the stomach and the jejunum
- G-port ends in the stomach for venting, feeds, meds
- J-port ends in the small intestine and only tolerates small volumes
- Note if medications/feeds are given via g-tube or j-tube and administer through correct port
- **Never** turn a GJ tube
- Changed every 3 months in radiology

8

G-tube Supplies

- Come in many different sizes - diameter of the tube ("French"), length ("cm")
- Generally diameter will not change, but length does as the child grows
- Supplies: replacement g-tubes or Foleys, extension sets, syringes, gauze, pump, feeding bags, tape,
- Supplies provided by patient's home care company.

9

Go-Bag Emergency G-tube Supplies

- All students with a g-tube should have an emergency kit available
  - Tape
  - water soluble lubricant
  - Foley catheters, and/or spare g-tubes
    - same size and a size smaller
  - 5-10mL syringe
  - clamps
- Caregivers should always have these emergency supplies with them in case of accidental dislodgement to save the tract

10

Skin Care at the Stoma Site

1. The skin around the G-tube should be cleansed 1-2 times daily
2. Cleanse with warm soapy water, let the area dry
3. Do not rotate the g-tube in the first 8 weeks
4. If the site leaks, apply gauze with tic tac toe tape pattern
5. Remove extension tube after each use (after first 2 weeks)

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Feeding The Child With a Gastrostomy

- Bolus Feedings – syringe, gravity bag, or pump-assisted
- Continuous Feedings – pump

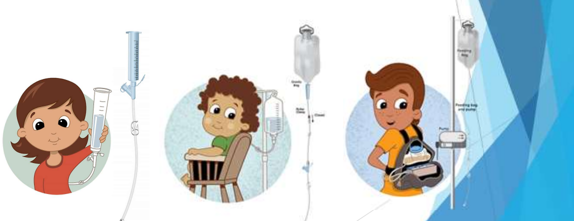

Illustration Credit: https://health.ucdavis.edu/media-resources/children/images/patient-education-A-to-Z/gastrostomy/Enteral-Pump-Feeding.png

12

Bolus feedings

- Syringe
- Gravity bag
- Pump assisted
- Method of feeding depends on child's tolerance – i.e. reflux, vomiting, upset stomach
- In general, bolus feeding should be given over the same time period a child would normally eat (~20min)
- Prime the tubing
- Flush with Water
- The higher the syringe, the faster it goes

13

Continuous feedings

- May be given 20+ hours a day if child has severe intolerance or J-tube feeds
- May be continuous feeding for 8-12 hours overnight with bolus feedings during the day
- Always given by pump

14

Tube Feeding Tips

- Feeding via g-tube should be as "normal" as possible
  - Hold infants in semi-reclined position, provide oral stimulation with pacifier if recommended
  - If indicated, give oral feedings before g-tube feedings
  - Older children seated in high chair or at the table if possible
    - Provide food to touch, smell, taste if safe/recommended
    - Provide cups, plate, bowl, utensils, or other toys to mouth if food is unsafe

15

Troubleshooting: Leaking from the center of the G-tube

- Caused by a broken anti-reflux valve
  - Entire tube must be replaced
  - Do not put syringes directly into button, use the extension set provided
  - If port cover is broken, then may attach feeding extension set to g-tube and clamp shut
- Not an urgent problem

16

Troubleshooting: Leaking around the G-tube site

- Causes: Granulation tissue, coughing, constipation, poor G-tube fit, leaking balloon
- Determine cause and treat if necessary
- Stabilize tube to prevent excessive movement
  - Use 2x2's under g-tube to help with fit and to absorb drainage, secure with tic tac toe tape
  - **Have parents check the water in the balloon after school**
- Appointment to evaluate size if unclear
- Protect the skin with barrier cream
- Not an urgent problem

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Troubleshooting: Granulomas

- Granulation tissue
  - Caused by manipulation of the tube, body's reaction to a foreign object, incorrectly sized tube
  - Determine cause and eliminate if possible
  - Treated with topical Rx steroid medications
  - If not improving with topical treatment have family call clinic for silver nitrate treatment
  - Secure tube with gauze and tape to prevent movement

18

Troubleshooting: Skin irritation at the site

- Skin is red, excoriated, sore, weepy
- Determine cause and treat
- Possible Causes:
  - leaking of gastric contents around g-tube site
  - tape sensitivity
  - manipulation of the G-tube
  - wrong size g-tube
  - Fungal overgrowth
- Clean with warm soapy water
- Apply topical skin barrier cream
- Keep Site Clean and Dry

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Troubleshooting: Bleeding at G-tube site

- Causes
  - Granuloma
  - Manipulation of tube
  - Tube was dislodged (pulled out)
  - Skin breakdown
- small amount of bleeding can be normal and is not an emergency, determine source of bleeding
- Apply pressure with gauze or a soft cloth x 5-10 minutes
- If bleeding does not stop, send them in

20

Troubleshooting: G-tube Cellulitis

- Infection of the skin around the tube (cellulitis) is rare
- Skin around G-tube is reddened, firm, and warm to the touch
- The redness spreads by the hour
- The child may run a fever
- The G-tube site is VERY painful
- May require treatment with oral or IV antibiotics (need same day appointment)

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Troubleshooting: The G-tube came out

- Don't Panic
- Remain Calm
- Preserve the Stoma
- Call the Parents

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Stoma Preservation

- If balloon button (Mic-Key, Mini One, etc.)
  - Balloon intact and filled → deflate balloon, put g-tube back in stoma, tape in place, call parent/emergency contact
  - Balloon broken/empty → put g-tube back in stoma, tape in place, call parent/emergency contact
  - If RN is comfortable, district policy allows, and the g-tube was placed > 8 weeks ago, RN may inflate balloon
- If unable to replace button, insert a Foley catheter or a smaller size g-tube, tape in place, and call parent or emergency contact.
- If GJ tube, or Long g-tube use balloon button or Foley for stoma preservation, they will need to go to the hospital for replacement
- Stoma can close within hours if button is left out.
- If the stoma narrows or closes, the child will need a painful dilation or another surgery to replace the tube.

23

Can you Delegate it?

- Yes, you can (provider order required, RN within scope, LPN, and UAP delegated)

1.6 Oral Feeding						
1.6.1 Nutritional Assessment			W	X	X	
1.6.2 Oral Feeding		Y *	W	W	T	*Need Rx if specific food texture or feeding techniques are required.
1.7 Special Feeding						
1.7.1 Naso-Gastric Feeding		Y	W	S	D *	*Can be delegated if placement can be determined by an objective measure
1.7.2 Gastrostomy Feeding		Y	W	S	D	
1.7.3 Jejunostomy Tube Feeding		Y	W	S	D	
1.7.4 Total Parenteral Feeding (intravenous)		Y	W	X	X	
1.7.5 Emergency Preservation of Gastrostomy stoma		Y	W	D *	D *	* Prior to use in school/childcare. Parent/guardian must verify that they have successfully administered feeding/medication using replacement device
1.7.6 Reinsertion of Gastrostomy button or tube for feeding		Y	W *	X	X	*Special training and verification of competency per district guidelines

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Revised Tube Feeding Authorization Form

- Prompt attention is important if a gastrointestinal feeding tube becomes dislodged. The tract can narrow or close in less then one (1) hour if it is not preserved. Do not use the G-tube or Foley catheter for feedings or medications until placement is verified by the parent. **If stoma < 8 weeks old stoma preservation may only be performed by a RN, and placement must be verified by provider before the tube is used.**
- School nurse or trained/delegated personnel will preserve the stoma:
- **Using a G-tube:** use new or dislodged balloon G-tube (Mic-Key) if available and undamaged. Deflate balloon, lubricate shaft with water-soluble lubricant if available (such as Surgilube) and insert into gastrostomy site. DO NOT INFLATE THE BALLOON. Secure in place with medical tape.
- **Using a Foley Catheter:** Use Foley catheter of the same diameter (French) or one size smaller than patient's dislodged G-tube. Lubricate the shaft with water-soluble lubricant if available. For a child that is less than one year old or if a child of any age has a J-tube you should insert the Foley catheter 1 inch. For a child over the age of one year that has a G-tube or a GJ-tube you should insert the Foley catheter 2 inches. Kink the tubing **(so that stomach contents does not leak out)** and tape it to the skin with medical tape". DO NOT INFLATE THE BALLOON.

Stoma Preservation Plan

- Clinic Name
- Phone Number: ______________________
- Provider's Name (Print): Date: Fax Number:
- Provider's Signature:

- https://www.childrenscolorado.org/globalassets/community/school-nurse/gastroenterology/tube-feeding-authorization-form.pdf?v=49d3b7

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Troubleshooting: Kids that pull out their g-tubes

- Is it possible to determine why is this happening? Determine the Root Cause
- Are there known triggers that can be avoided or minimized?
- Is this behavior related to an issue with the device, pain, itch, or is it a behavior that meets another need? For instance, does this happen when the student is generally frustrated and cannot communicate effectively? Is there an issue with the actual g-tube site?
- Can staff anticipate when this is going to happen and provide the student with a diversional activity that prevents him or her from pulling on the device?
- Before applying a physical barrier to prevent pulling, collaboration with the care provider and parent/guardian, in addition to investigating best practices, would need to occur to ensure that any techniques used are safe and appropriate.
- You may start seeing Cinch device and the Gus Gear 3000 in the community as possible solutions for this problem

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Summary

- Gastrostomy tubes are important tools for long-term feeding supplementation for some children
- Many types of gastrostomy tubes exist – skin level buttons most common device in children
- Proper skin care and ability to troubleshoot problems is important
- In the event of dislodgment please preserve the stoma to avoid unnecessary expense, pain, trauma, surgeries
- We are here to support you, use your resources

Photo Credit: https://stjude.scene7.com/is/image/stjude/shutterstock_1160313853?wid=500

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Resources

- One Call 720-777-3999
- Special Care Clinic
  - Nurse triage 720-777-6739
  - Care Coordination 720-777-2950
- Surgery G-Tube Clinic Nurses 720-777-8858
- Family Learning Center 720-777-5329
- CHCO Website
  - School Nurse Resources
    - https://www.childrenscolorado.org/community/community-health/school-health/school-nurse-resources/ Community

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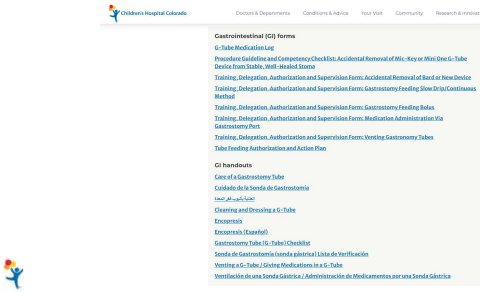
The School Nurse Resources Website!!!

https://www.childrenscolorado.org/community/community-health/school-health/school-nurse-resources/



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References

Delegation Grid - CDE website

Tube Feeding Authorization Form CDE website

Supporting Students with Special Healthcare Needs - Guidelines and Procedures for Schools 3rd Edition

PDFs Handouts published by CHCO attached to this conference

Children's Hospital Colorado YOUTUBE channel has multiple videos on g-tube care

30