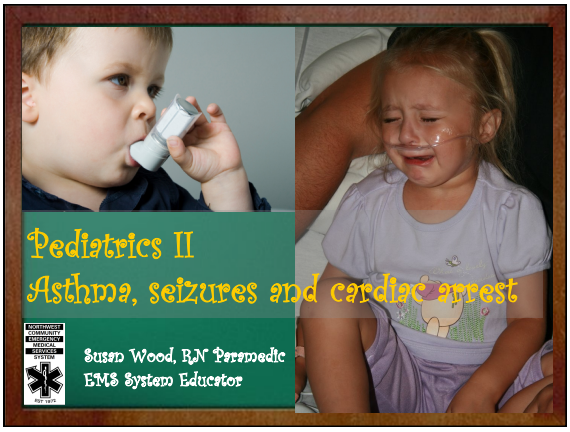
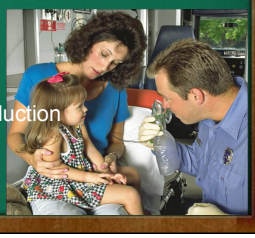


Asthma

~21% of all asthma cases are school aged

Identify 3 symptoms of an asthma exacerbation
- Bronchospasm
- Edema of the bronchi
- Increased mucus production



Children are different…

Smaller airways

Do they compensate through increased tidal volume?

NO

They increase their respiratory rate causing airways to **dehydrate**

Cough variant asthma

What is it and how does it present?

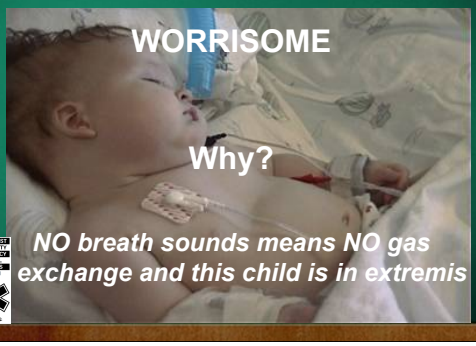
May not wheeze but continuously cough for 20 – 30 minutes after excitement or exercise

May also abruptly vomit without nausea

Symptoms of severe distress

Appearance	Exhausted, lethargic
Work of breathing	Severe SOB
SpO2	94% or less
Capnography	EtCO2 elevated over 55 w/ shark fin waveform
Breath Sounds	Decreased or absent
HR	Bradycardia

A **silent** chest is…



Hypoxemia + hypercarbia=

Acidosis
Bradycardia

Children die from acidosis or hypoxia?

ACIDOSIS

Based on SOP…

What is the first line of treatment for a pt with *mild to moderate* distress	**ALBUTEROL 2.5 mg (3 mL) via HHN or mask**
If pt remains hypoxic, what additional treatment modality can be given?	**Supplement w/O2 6 L/NC if patient is hypoxic and using a HHN**
When should transport begin?	**Begin transport as soon as albuterol is started. Do not wait for a response.**

Continue/repeat **ALBUTEROL** while enroute to hospital.

What symptoms are associated w/ a patient in severe distress?

Severe SOB	↓BS	absent breath sounds	SpO_2 94 or less
hypoxic	exhausted	brady	time sensitive

Based on the symptoms mentioned for a pt in severe distress, what is first line treatment?

Epinephrine (1:1000) 0.01 mg/kg IM

Maximum 0.3 mg

What equipment was needed?

All are true

Pt. is hypoxic, needs higher FiO_2.	TRUE
If albuterol is given 1st with only one source of oxygen, you are unable to give more than 6L until you get to the ambulance or bring in another portable tank.	TRUE
If in the ambulance, EMS can give O_2 6 L/ neb in addition to 6 L/NC	TRUE
If patient is severely bronchoconstricted, nebulized albuterol may not reach target tissues.	TRUE
The combination of epi and albuterol on a hypoxic heart can be lethal.	TRUE

After epi…what is next?

Albuterol 2.5 mg/3 ml. via HHN, mask or BVM/ET.

Continue/repeat Albuterol enroute to the hospital.

May repeat epi X 1 in 10 minutes if minimal response.

And if the pt still isn't getting relief?

Magnesium

25 mg/kg (max 2 Gm) mixed with NS to total 20 mL

slow IV/IO over 10-20 min.

What equipment is needed?

**What role does ipratropium play in pediatric patients with asthma?

Use is only permitted after OLMC

PCR Review
Respiratory Distress

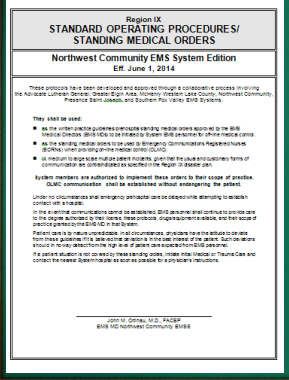
Adults= ↑ stroke volume by ↑ inotropy (strength of contraction) & chronotropy (rate of contraction) when the SV decreases.

Peds= can only increase chronotropy & has low compliance related to volume; therefore Ø compensate by ↑ SV.

Consequently, heart rate should be seen as significant

When a peds pt becomes bradycardic, it should be assumed that CO has been drastically ↓

Beyond the Basics: Pediatric Assessment & Management
DANIEL LIMMER, AS, EMT-P, JOSEPH J. MISTOVICH



Region IX
STANDARD OPERATING PROCEDURES/
STANDING MEDICAL ORDERS

Northwest Community EMS System Edition
Eff. June 1, 2014

SOP Review

**BREATHING IS EVERYTHING TO A CHILD…
REMEMBER THE BASICS**

Seizures

Growing epidemic affecting 4.5% pop

Majority affect those < 20yrs of age

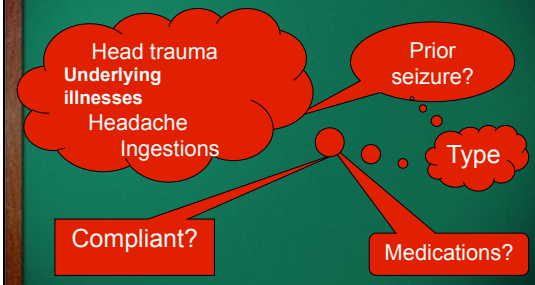
Cause known ~ 50%

Often when EMS is called, arrival is during post-ictal state or after activity ceases

Hx and PE crucial to pass along

Sz etiology helps determine tx

A good history can tell the future



Describe the event

Duration
Aura
Muscle rigidity
Post-ictal
Incontinence
General vs. local
Eye deviation
Trauma to oral cavity
Abnormal behavior (ie. lip smacking)

What are the two highest priorities when treating a pt with seizure activity?

When is a seizure pt to be treated?

Only if generalized tonic / clonic activity

What is the first treatment?

Midazolam 0.1 mg/kg IV/IO to max of 5mg

Higher priority?

midazolam **blood glucose level**

Reasons to identify if febrile

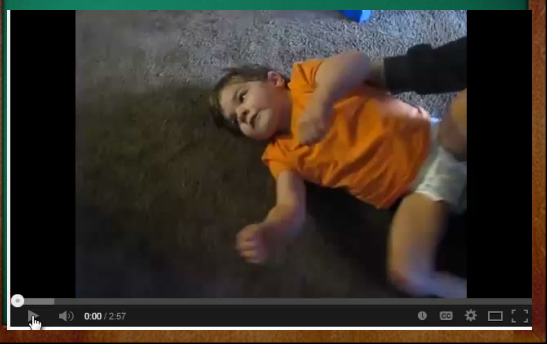
Hydration status
Infectious possibility

How is cooling accomplished?

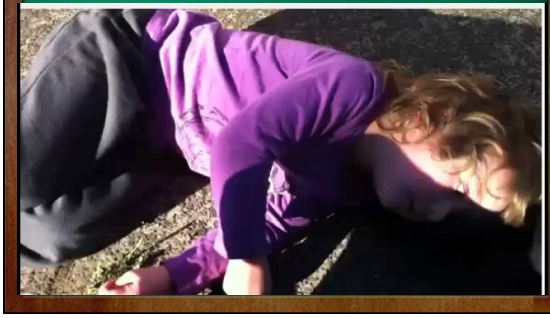
Passive by removing clothing & cover lightly

Types of Seizures

Identify activity for documentation



General Tonic Clonic activity



Treat or not to treat?

Complex Partial seizure

The common denominator for unexpected deaths in children is hypoxia

A child's metabolism is 2x an adult requires ↑ quantities of oxygen

The body's source for oxygen comes from the pulmonary system, therefore children w/ respiratory issues will progress rapidly to cardiovascular compromise death.

We will never treat what we do not recognize…

Therefore…

Once bradycardia is identified in a respiratory compromised pediatric patient, intervention must be swift.

Otherwise, long term prognosis is poor for those who go into arrest, even if resuscitative efforts are successful.

Identify an example for the following…

Hypoxemia
Hypovolemia
H+ acidosis
Hypothermia
Hyper/hypokalemia
Hypoglycemia

Toxins
Tamponade
Thrombosis
Trauma
Tension pneumo

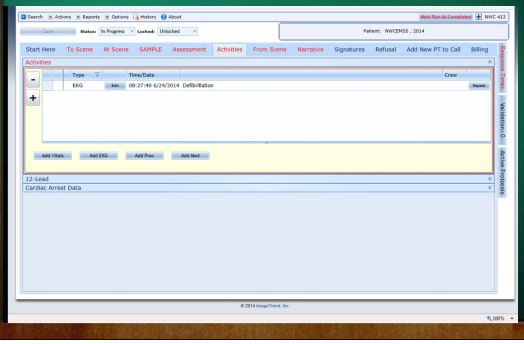
Infant vs. Child Compressions

	Infant	Child
Location	Just below nipple line	Lower ½ of sternum nipple line
Depth	1/3-1/2 depth of chest	1/3-1/2 depth of chest
Rate	100 / min	100 / min
Method	2 thumbs encircling chest	Either 1 or 2 hands to compress

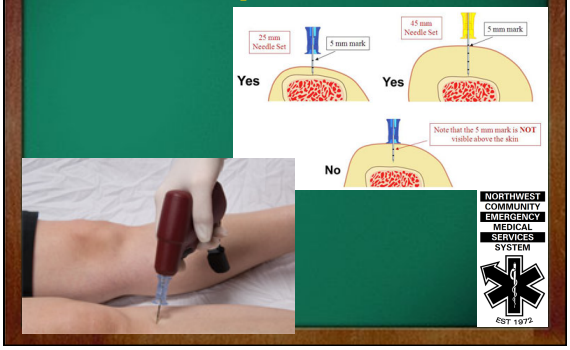
4 critical elements of CPR

1. Push HARD
2. Push FAST
3. RELEASE completely
4. MINIMIZE interruptions

Defibrillation



IO in pediatrics



Scenario

PBPI Feedback

100% of peds cardiac arrests reviewed from 2011-2014 had compressions initiated immediately prior to defibrillation

BLS adjuncts were not used in 2/3 of calls

59% of calls did not include capnography doc. properly throughout resuscitation

PBPI Feedback

Capnography Ø documented Q 2 min 76%

amiodarone Ø used 25% of calls in which it was indicated

Epi was Ø doc. as given correctly 53% of calls

Joules were not doc. in ANY of the calls