PREPARING AN OFFICE PRACTICE FOR PEDIATRIC EMERGENCIES

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1

NO DISCLOSURES

2

OBJECTIVES

- **Are pediatric emergencies common in medical office?**
- **What the common pediatric emergencies?**
- **What is the best approach to prepare the medical office for pediatric emergencies?**

3

EMERGENCIES IN THE PEDIATRIC OFFICE

- A primary pediatric office may need to provide triage and treatment for childhood emergencies
- Parents seeking help for their children suffering for life-threatening illness may seek guidance from those physicians who they know and trust most
- The office and staff must be prepared to provide initial stabilization and when needed life-saving care.
- Initial treatment provided in the office may mean the difference between life and death
- Stabilization of pediatric emergencies and timely transfer to an appropriate facility are important responsibilities of every medical provider

4

EMERGENCIES IN THE PEDIATRIC OFFICE

- Emergency conditions coming to the medical office setting are relatively frequent, the actual number varies depending upon the office characteristics
  - Suburban setting
    - More than 2400 life-threatening emergencies per year
    - Average of 24 emergencies per office per year
  - Urban setting
    - 2/3 reported caring for at least one child who required hospitalization each wk
    - 80% reported caring for at least one severely ill child in the past 3 months
    - *Survey of pediatrician and family medicine offices in Connecticut

5

WHAT ARE THE MOST COMMON EMERGENCIES?

- Respiratory emergencies, asthma
- Neurologic emergencies, seizures
- Sepsis or severe infection
- Dehydration
- Anaphylaxis
- Choking
- Head trauma
- Cardiopulmonary arrest

6

OFFICE PREPARENESS –

7

OFFICE PREPAREDNESS

- Steps to prepared an office to handle a pediatric emergency
  - Office-based self assessment
  - Development of a written response plan
  - Training for all staff
  - Effective surveillance and triage for critically ill children who come to the office
  - Effective communication with emergency medical services
  - Assurance of safe transport to a higher level of pediatric care

8

OFFICE PREPAREDNESS

- In office practices in close proximity to facilities with pediatric resuscitation capabilities, the focus should be on brief stabilization and rapid transfer
- In those offices that are remote and with only basic emergency medical services, the offices staff need to be able to provide extended resuscitation

9

OFFICE-BASED SELF-ASSESSMENT

- Provides the information necessary to optimize readiness for pediatric emergencies
- The goal of the assessment:
  - What are the most common types of emergencies in the given office population and setting
  - What resources are available in the office to respond to emergencies
  - EMS capability?
    - Basic life support, or advance life support
    - Response time to the practice
  - Which is th closest facility that can provide higher level of pediatric resuscitation and what are the best means of communication
  - Which is the closest facility that can provide definite care and what are the best means of communication

10

RESPONSE PLAN

- Develop a written response plan and obtain appropriate training, equipment and medications
- Assign roles to each team member in advance of the event
- The response plan should address the following:
  - Recognition and triage of a pediatric emergency
  - Internal notification
  - EMS activation
    - The office member with this role should expeditiously contact EMS services and have a clear understanding of the capabilities of their EMS

11

TRIAGE

12

TRIAGE

- Children already in the office
  - Seriously ill child in the office needs to be evaluated, restated and transferred emergently
  - All office staff both clinical and nonclinical should know signs and symptoms of repiratory distress, shock, seizures and AMS, and know how to start the office response plan
- Telephone triage
  - Each practice should have a specific set of formal guidelines for telephone communication that allow users to determine the degree of illness of the child and the appropriate disposition
  - The staff responsible for fielding parents call should be trained in the protocol use
  - All telephone calls should be documented and added to patient's chart

13

EMS ACTIVATION

- Provide the following information to the EMS dispatcher
  - Office address and location within the building
  - Where to access the building and where to park the ambulance
  - Child's age, medical condition, and if available, virtual signs
  - Type of EMS needed, basic vs advance
  - The caller should not hang up until the EMS dispatcher ask all the above information

14

15

OFFICE RESUSCITATION

- Where should the child be resuscitated?
- How is resuscitation equipment and medications organized?
- Who is responsible to bring the equipment and medications?

16

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- The Committee on Pediatric Emergency Medicine for the APP have provided a list that delineates the essential and strongly suggested medications and equipment available at pediatric offices
- Essential
  - Should be available in all pediatric practices
- Strongly suggested
  - In those practices were response time of Advance life support ambulance is more than 10 min

17

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Essential
  - Equipment
    - Airway
      - Oxygen delivery systems
      - Oxygen masks
      - Portable suction device, flexible and rigid
      - Nebulizer or MDI
      - Self-inflating bag-valve-mask
      - Oropharyngeal airways
      - Pulse oximeter

18

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Essential
  - Medications
    - Oxygen
    - Albuterol
    - Epinephrine (1mg/ml [1:1000])

19

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Miscellaneous
  - Sphygmomanometer with appropriate age cuff sizes
  - Resuscitation guide (e.g. Broselow® tape)
  - Cardiac arrest board
  - Sterile dressings
  - Splints
- Personal protective equipment
  - Latex-free gloves
  - Surgical masks
  - Eye covers
  - Gowns

20

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Strongly suggested
  - Equipment
    - Airway
      - Suction catheter
      - Yankauer suction tip
      - Lanryngoscope handle and blades
      - Endotracheal tubes
      - Stylets
      - End-tidal CO2 detector

21

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Strongly suggested
  - IV access and fluids
    - Latex-free tourniquet
    - Butterfly needles
    - IV catheters
    - IO needles
    - IV tubing

22

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Strongly suggested
  - Miscellaneous
    - AED's
    - POC GLU
    - Cervical collars
    - Heating source

23

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Medications and fluids
  - Activated charcoal with sorbitol
  - Antibiotics
  - Antiseizure medications (benzos)
  - Corticosteroids
  - Dextrose
  - D5 NS
  - Diphenhydramine
  - Atropine
  - Naloxone
  - NS
  - Sodium bicarbonate

24

PEDIATRIC OFFICE RESUSCITATION SUPPLIES

- Utilizing a system that helps the clinical staff rapidly determine that appropriate equipment and medication dosing is strongly encouraged
- Broselow® tape or Broselow® Pediatric Resuscitation Systems
  - Significantly reduce medication and equipment sizing errors
- A member of the office staff should regularly inspect the resuscitation supplies

25

PATIENT TRANSFER

26

PATIENT TRANSFER

- The response plan should identify the preferred EMS provider and the preferred destination facility for EMS transport
- Type land should reinforce that a written patient care record should be generated during the resuscitation and accompany the patient as part of the transfer process
- Safe transport of a critically ill child involves
  - Moving the pt to a higher level of care
  - Stabilization of the condition to the extend of the office capabilities
  - The pt should be transported by personnel who can provide care if the condition deteriorate
  - Clear understanding of the different types of EMS transport

27

PATIENT TRANSFER

- Advance Life Support = Life-threatening problem
  - AMS
  - Respiratory distress
  - Potential airway management or vascular access
- Basic Life Support
  - Limb-threatening problems
  - Requires first aid
  - Oxygen administration
  - Immediate transport

28

PATIENT TRANSFER

- Unless an advance pediatric facility is nearby, transport to a local hospital emergency department is preferred
- Once stabilized the pt can be transferred to an advance pediatric center
- Telephone contact between the pediatric provider and the physician at the receiving facility is essential
- Safe transport of the critically ill pt does not include the parents car
  - 1991 survey of pediatric and family medicine offices
    - 54% reported using the family car to transport seriously Ill children
    - 93% had access to EMS
    - 9.5% had a contract with a specific ambulance company
    - Some of the reasons given was perception of increase efficiency of the family care, expense of the EMS and failure to consider EMS as an option

29

DETERIORATION OR DEATH OF THE PATIENT DURING TRANSPORT WHEN NONMEDICAL MEANS OF TRANSPORTATION ARE USED IS THE RESPONSIBILITY OF THE SENDING PHYSICIAN

30

THE BENEFIT OF TRAINED PERSONNEL AND PROPER EQUIPMENT DURING TRANSPORT OUT WEIGHTS THE RISK OF WAITING FOR EMS TO ARRIVE

31

MOCK RESUSCITATION AND TRAINING

32

MOCK RESUSCITATION

- Testing of the response plan through periodic mock resuscitations maintain readiness for pediatric emergencies and permit updating of the plan
- Low fidelity simulation are as effective as high fidelity exercises in teaching teamwork skills, role clarity and easy to implement in the office setting
- Performing mock resuscitations in conjunction with emergency providers and local EMS teams is a proven method for enhancing office readiness

33

TRAINING

- The AAP recommended that all certified providers at minimum have training in BLS
- PALS training is strongly suggested for offices that do not have ready access to ALS courses through their local EMS

Basic and Advance pediatric life support courses			
Course	Cost	Available online?	
BLS	$15 to $30	Yes	
PALS	$149 to $280	Yes	
APLS	$250 to $350	Yes	
ENPC	$180 to $385	Yes	
ACLS	$185 to $275	Yes	

34

DOCUMENTATION

35

DOCUMENTATION

- A patient car record should be generated during the resuscitation
- Use of a pre-formatted code documentation sheet can assist in rapidly capturing key information.
  - Important components to include:
    - Clinical personnel involved
    - Initial patient condition
    - Patient assessment with serial vital exams
    - All interventions performed
    - Timing of interventions
    - Patient response to treatment
    - Patient condition upon departure
    - Time EMS was called, EMS arrived time and EMS departure time
    - Time of call to receiving facility, name of receiving physician and content of discussion
    - Communication with family

36

AHA GWTG-R ADULT AND PEDIATRIC CODE BLUE DOCUMENTATION FORM Page___of___

Date:_______ **Time Event Recognized:**_______________ **Location of Event:**___________________ **Witnessed?** ☐Yes ☐No

Age :________ **Weight :**_________ **Gender :**________ **Race:**____________ **Hospital-wide resuscitation response activated?** ☐Yes ☐No

Illness Category ☐ Medical Cardiac ☐ Medical Noncardiac ☐ Newborn ☐ Obstetric **Pre Event MEWS Score:** ______

☐ Surgical Cardiac ☐ Surgical Noncardiac ☐ Trauma ☐ Other________ **Pre Event PEWS Score:** ______

Condition when need for chest compressions/defibrillation was identified? ☐Pulseless ☐Pulse (poor perfusion)

Interventions Already in Place: ☐ Assisted or mechanical ventilation (includes CPAP/BiPAP) ☐Intra-arterial catheter ☐ETCO² monitoring

☐Vascular Access ☐Vasoactive drug ☐Supplemental O² **Monitoring at Onset:** ☐ECG ☐Pulse Oximeter

Time of First Assisted Ventilation:____________________

Ventilation: ☐BVM ☐ETT ☐LMA ☐Tracheostomy tube

☐ Mask or Nasal CPAP/BiPAP ☐ Other __________

Invasive Airway: ☐In place at time event ☐Inserted ☐Reinserted

If inserted/reinserted: By whom: ____________________

Time: ____________________

Confirmation: ☐ Waveform ETCO² ☐Numeric ETCO²

☐Color ETCO² ☐Direct laryngoscopy

First Rhythm Requiring Compressions: ____________________

First Documented PULSELESS Rhythm: ____________________

Time Chest Compressions Started:____________________

Compression Method Used: ☐ Standard manual ☐ IAC-CPR

☐ Active Compression-Decompression Device

☐ Automatic Compressor ☐ Open Chest ☐ Other__________

AED or Defibrillator in AED mode applied? ☐ Yes ☐ No

If yes, time AED applied: ____________________

Time	Breathing Spontaneous	Breathing Assisted (✓)	Pulse Spontaneous	Pulse Compression (✓)	BP	Rhythm	ETCO²	Joules	Bolus ~ Dose / Route: Amiodarone Dose / IV or IO	Atropine Dose / IV or IO	Epinephrine Dose / IV or IO	Lidocaine Dose / IV or IO	Vasopressin Dose / IV or IO		Infusions ~ Dose / ml per hour:	Dopamine	Epinephrine	Norepinephrine		Comments: i.e.: Peripheral/Central Line Placement, IO, Chest Tube, Vital Signs, Response to Interventions

Time Event Ended: ____________ **Status:** ☐Survived - ROC ☐Expired - Efforts terminated, no ROC

Was CPR Performance Monitored or Guided by? ☐Waveform ETCO² ☐Arterial Waveform/Diastolic Pressure ☐CPR Mechanics Device

☐Metronome ☐Other ____________________

Recorder Signature: ____________________

Recorder Printed Name: ____________________

Provider Signature: ____________________

Provider Printed Name: ____________________

PATIENT IDENTIFICATION

37

SUMMARY

- Office visit by children requiring emergency care are common
- Office-based self-assessment and development of an emergency response plan are essential steps for preparing the office of a pediatric emergency
- Periodic mock codes performed in primary care offices are an effective method to increase resuscitation skills
- Nonclinical personnel are often the first office staff to assess the patient and should receive basic training regarding signs and symptoms of common pediatric emergencies
- Obtain, organize and maintain appropriate equipment and medications
- Train of office staff
- Periodic surveillance by experienced clinical personnel
- Assure safe transport to a higher level of pediatric care

38