

Data Supplement S1. Supplemental material

Appendix S1. Round 1 – Delphi Instrument

Thank you for taking the time to participate in our Educational improvement initiative. As you are aware, there is not a standardized Pediatric Emergency Medicine (PEM) curriculum within Emergency Medicine Residencies. Knowing that pediatric encounters often create high stress situations and can carry medical-legal risk it is important to ensure we are training residents adequately.

In 2017 a modified Delphi study was conducted looking at this issue. As a result, the authors published a list of 153 topics, 84 skills and 28 experiences that should be included in emergency medicine residency training to ensure adequate PEM training. This list was further sorted into either highly recommended or partially recommended.

We are requesting your assistance in further clarifying which of these topics need a specific curriculum intervention (outside of standard EM curriculum) and recommend the type of educational intervention that would be most appropriate.

Please note you will be asked separately about the highly recommended topics and the partially recommended topics.

1. The topics below were "Highly recommended topics" from the published list.

Below is a list of topics that we have identified from that list as needing PEM specific curriculum. **Please select/circle any topic(s) that you feel is on this list in error and can be covered as part of the general EM curriculum.**

Recognize a sick child	Acute DKA and hyperglycemia	Intussusception
The approach to the febrile or septic neonate	Malrotation/volvulus	Common signs and symptoms of physical abuse in children
Neonatal congenital cardiovascular presentations	Pediatric sepsis	Meningitis
Asthma	Recognition of fracture patterns that suggest abuse	Diagnosis and stabilization involving small dose ingestions dangerous or fatal to toddlers
Bronchiolitis	Appendicitis	CAH shock in neonates
Jaundice	Croup	Application of rules for fluid resuscitation in children, 20ml/kg bolus
Basic airway maneuvers, including appropriate positioning based on pediatric anatomy	ET intubation of infants	ET intubation of young children
Cervical spine clearance based on age	Pediatric burn management	Pediatric trauma resuscitation
Age appropriate neurologic assessment	Recognition of emergencies in febrile sickle cell disease	Myocarditis
Slipped capital femoral	Ingested foreign bodies	Pyloric stenosis

epiphysis		
Recognition of pediatric heart failure	Postoperative congenital heart disease child	Detecting physical abuse through history and physical examination
Foreign-body removal - nose	Assessing child for aspirated foreign bodies	How to take a pediatric specific history including pertinent positives such as birth history/birthweight/loss
Laws pertaining to medical personnel responsibility for child abuse and neglect	Febrile seizures	Diagnosis of children with a pediatric/toddler limp
Vomiting-by age group	Acute otitis media	Lumbar puncture in neonates
How to successfully perform a physical examination on pediatric patients of varying ages	Unique patterns of injury in the pediatric spine	Foreign-body removal - ear
Know signs and symptoms of Kawasaki's disease	Reduction of radial head subluxation (nurse maid's elbow)	Neonatal resuscitation
Recognition of normal vital signs based on age and stage of development	Calculate bolus and maintenance fluids for children based on age	Application of rules for fluid resuscitation in children 4.2.1 rule for maintenance of IV fluid resuscitation
Pediatric dosages of acetaminophen	Establish rapport with children of different ages	Mobilizing resources for nonaccidental trauma

2. The topics below were "Partially recommended topics" from the published list.

Below is a list of topics that we have identified from that list as needing PEM specific curriculum. **Please select/circle any topic(s) that you feel is on this list in error and can be covered as part of the general EM curriculum.**

Common problems of NICU graduates-necrotizing enterocolitis: medical and surgical	General administrative, legal and ethical issues involved with treating children in an ED	Recognize and manage-Henoch-Schonlein purpura
EMS transport of children	Higher risk for medical error in pediatric v. adults	Leukemia
Common traumatic conditions-penetrating trauma	Neonatal hypoglycemia	Musculoskeletal injuries by age group
Use of head/cervical spine rules	Use of fracture rules such as Salter-Harris	Common traumatic conditions-blunt abdominal trauma
Constipation	Nasal agents-fentanyl/versed	Application of strategies for performing accurate PE on a difficult child

Chest tube placement on infants	Invasive airway rescue options- transtracheal jet	Chest tube placement on young children
Anticipatory guidance to parents	Install umbilical artery or vein catheters	Anatomic and physiologic differences of pediatric patients based on developmental stages: neonate, infant, toddler, preschooler, grade schooler, adolescent/teenage
Key decision rules-Kocher criteria for septic joint	Glomerulonephritis	Recognition of uncommon but serious hematologic disorders
Management of ocular emergencies-tips and tricks for examining a child's eyes	Treatment of acute presentations of cystic fibrosis	Common problems of NICU graduates-bronchopulmonary dysplasia: chronic lung disease from no surfactant
Knowledge of vaccination schedules and what illnesses children are vaccinated against	Red stool	Manage special-needs children- autism
Persistent fever over 7 days	Idiopathic hypertrophic subaortic stenosis (hypertrophic cardiomyopathy)	Psychosocial differences of pediatric patients based on developmental milestones
Meckel's diverticulum	Manage special-needs children- cerebral palsy	Biliary atresia
Recognition of how pediatric emergencies provoke higher levels of anxiety among ED physicians	Pediatric dosages for ibuprofen	Pediatric dosing for adenosine
Pediatric dosage of epinephrine (anaphylaxis)	Pediatric dosage of ketamine	Pediatric dosage of epinephrine (code)
Pediatric dosage of morphine	Pediatric dosing for amoxicillin (high dose)	

3. Highly recommended topics:

We have identified the topics below as ADEQUATELY COVERED in general EM curriculum. These are topics that DO NOT need dedicated pediatric educational interventions. In other words, the pediatric component of these topics will be covered with the general curriculum.

Please review the topics and select/circle any topic(s) that you believe have been placed on this list in error. In other words, you'd be selecting topics that should have dedicated PEM educational interventions.

Discriminate between patients who can be sent home and those who need admission	Fever and neutropenia	Discrimination between common and deadly rashes
Pre-septal/orbital cellulitis	Recognize patients who need higher levels of care than the	Intra-abdominal surgical emergencies

	ED, i.e. NICU or PICU	
Place an intraosseous line	Anaphylaxis	Airway management for respiratory failure
Resources for evaluation of children suspected of suffering child abuse and neglect	Bag-valve-mask ventilation (stress over ET intubation)	Lumbar puncture
Pediatric airway adjuncts	Laryngeal mask airway	Resuscitation strategies involving blood, fluids and glucose
Needle cricothyrotomy	Cardioversion/defibrillation	Postoperative tonsillectomy
Noninvasive airway management (NFNC, nasal CPAP, optiflow, BiPAP)	Diagnosis and management of Rocky Mountain Spotted Fever	Conversion of SVT
Laceration repair (suturing) with consideration for child's age	Indications for emergent blood transfusions in patients with shock	Interpretation of chest X-ray
Ability to trouble shoot common pediatric medical devices-tracheostomy	Immobilize common pediatric fractures using splinting	Common traumatic conditions-head injury, blunt head trauma, concussion with return to play instructions
Tracheostomy tube placement	Major traumatic brain injury	Ventilator management
Respiratory distress	Matching appropriate agent for the procedure	Retropharyngeal abscess
Place an IV line	Altered mental status	Using succinylcholine for ketamine assoc. laryngospasm rescue
Minor head injury	Needle decompression of a pneumothorax	SVT
Effective communication with parents	Pharyngitis	Diagnosis and management of Neisseria
Epidural hematoma	Pediatric Adv Life Support (PALS)	Management of sickle cell pain crisis
Use of computerized tomography for scans of the head	Radiology-determination of when to use imaging: risks and benefits	Pediatric basic life support (BLS)
Diagnosis and management of sexual abuse	Recognition of the "high-stakes" milieu of pediatric emergencies	

4. Partially recommended topics:

We have identified the topics below as ADEQUATELY COVERED in general EM curriculum. These are topics that DO NOT need dedicated pediatric educational interventions. In other words, the pediatric component of these topics will be covered with the general curriculum.

Please review the topics and select/circle any topic(s) that you believe have been placed on this list in error. In other words, you'd be selecting topics that should have dedicated PEM educational interventions.

Incision and drainage of abscess	Complete eye examination (including slit-lamp examination)	Reduction of paraphimosis
Nasal packing	Pericardiocentesis	Pediatric dosages for poly-pharmaceutical ingestions in adolescents
Interpretation of radiographs of MSK	Pediatric devices-insulin pump	Delivering bad news
Antibiotic stewardship	External cardiac pacing	ENT emergencies-epistaxis
Effective communication with consultants	Weakness or failure to thrive	Chest pain
Neurologic emergencies-stroke	Recognize and manage-viral exanthems	Manage of ocular emergencies-trauma
Viral syndromes	Pediatric devices-gastrostomy tube	Upper and lower urinary tract infections
Manage of ocular emergencies-foreign bodies	Encephalitis	Gastrostomy tube placement
Initial management of metabolic diseases	Conditions/criteria for transfer to specialty care	Syncope
Headache	Environmental emergencies-heat stroke/heat exhaustion	Stabilization of caustic ingestions (tide pods)
Environmental emergencies-hypothermia	Pyelonephritis	Stabilization involved with common pediatric overdose/poisoning-propofol
Ataxia	Interpretation of radiographs of soft tissue neck	Discrimination between MSK patients who need urgent consult vs. those who can be referred to outpatient care
Foreign-body removal from-soft tissue	Gastroenteritis	Diagnostic US-FAST scan
Suicide	Wound management	Acute presentations-pneumonia, viral and bacterial

5. Please add any additional topics or comments about this list of highly recommended curriculum topics needing dedicated PEM curriculum or the method of providing that curriculum

6. Please add any additional topics or comments about this list of partially recommended curriculum topics needing dedicated PEM curriculum or the method of providing that curriculum

Appendix S2. Round 2 – Delphi Instrument

Thank you very much for your help during round 1 of this project.

During round 1 we reached consensus on nearly all topics. We have 16 remaining topics that we need to reach consensus on and would like your help! This phase should only take ~ 5 minutes. Thank you!

EM topic - the underlying pathophysiology and treatment is similar between adults and pediatrics and could be included as part of a teaching session on the topic (e.g. anaphylaxis - though there are slight variations the foundation of treatment and diagnostic criteria are the same for all ages).

PEM topic - these topics are specific in to a pediatric population or have clinically significant differences in diagnosis or management (e.g. pyloric stenosis - this occurs only in the infant age group or pediatric sepsis - underlying differences in physiology lead to distinctly different management).

1. The following topics did not meet consensus.

With the above definition in mind, please indicate whether each topic should have a dedicated PEM curriculum during EM residency. Please include your justification for each topic.

Topic	PEM Specific	General EM	Please explain:
Meningitis	<input type="checkbox"/>	<input type="checkbox"/>	
Appendicitis	<input type="checkbox"/>	<input type="checkbox"/>	
Acute otitis media	<input type="checkbox"/>	<input type="checkbox"/>	
EMS transport of children	<input type="checkbox"/>	<input type="checkbox"/>	
Higher risk for medical error in peds v. adults	<input type="checkbox"/>	<input type="checkbox"/>	
Common traumatic conditions - penetrating trauma	<input type="checkbox"/>	<input type="checkbox"/>	
Common traumatic conditions - blunt abdominal trauma	<input type="checkbox"/>	<input type="checkbox"/>	
Application of strategies for performing accurate PE on a difficult child	<input type="checkbox"/>	<input type="checkbox"/>	
Anticipatory guidance to parents	<input type="checkbox"/>	<input type="checkbox"/>	
Glomerulonephritis	<input type="checkbox"/>	<input type="checkbox"/>	
Recognition of how pediatric emergencies provoke higher levels of anxiety among ED physicians	<input type="checkbox"/>	<input type="checkbox"/>	
Discriminate between patients who can be sent home and those who need admission	<input type="checkbox"/>	<input type="checkbox"/>	

Discriminate between common and deadly rashes	<input type="checkbox"/>	<input type="checkbox"/>	
Airway management for respiratory failure	<input type="checkbox"/>	<input type="checkbox"/>	
Diagnosis and management of sexual abuse	<input type="checkbox"/>	<input type="checkbox"/>	
Lumbar puncture	<input type="checkbox"/>	<input type="checkbox"/>	

2. This is the list of topics that reached consensus from round 1 for dedicated PEM curriculum. Please review this list and if there are topic(s) if you think there is a topic here in error, please indicate/circle in the box below.

Recognize a sick child	How to take a pediatric specific history including pertinent positives such as birth history/birthweight/loss	Application of strategies for performing accurate PE on a difficult child
Acute DKA and hyperglycemia	Laws pertaining to medical personnel responsibility for child abuse and neglect	Chest tube placement on infants
Intussusception	Febrile seizures	Invasive airway rescue options- transtracheal jet
The approach to the febrile or septic neonate	Diagnosis of children with a pediatric/toddler limp	Chest tube placement on young children
Malrotation/volvulus	Vomiting-by age group	Anticipatory guidance to parents
Common signs and symptoms of physical abuse in children	Acute otitis media	Install umbilical artery or vein catheters
Neonatal congenital cardiovascular presentations	Lumbar puncture in neonates	Anatomic and physiologic differences of pediatric patients based on developmental stages: neonate, infant, toddler, preschooler, grade schooler, adolescent/teenage
Pediatric sepsis	How to successfully perform a physical examination on pediatric patients of varying ages	Key decision rules-Kocher criteria for septic joint
Asthma	Unique patterns of injury in the pediatric spine	Glomerulonephritis
Recognition of fracture patterns that suggest abuse	Foreign-body removal - ear	Recognition of uncommon but serious hematologic disorders
Diagnosis and stabilization involving small dose ingestions dangerous or fatal to toddlers	Know signs and symptoms of Kawasaki's disease	Management of ocular emergencies-tips and tricks for examining a child's eyes
Bronchiolitis	Reduction of radial head	Treatment of acute

	subluxation (nurse maid's elbow)	presentations of cystic fibrosis
CAH shock in neonates	Neonatal resuscitation	Common problems of NICU graduates-bronchopulmonary dysplasia: chronic lung disease from no surfactant
Jaundice	Recognition of normal vital signs based on age and stage of development	Knowledge of vaccination schedules and what illnesses children are vaccinated against
Croup	Calculate bolus and maintenance fluids for children based on age	Red stool
Application of rules for fluid resuscitation in children, 20ml/kg bolus	Application of rules for fluid resuscitation in children 4.2.1 rule for maintenance of IV fluid resuscitation	Manage special-needs children-autism
Basic airway maneuvers, including appropriate positioning based on pediatric anatomy	Pediatric dosages of acetaminophen	Persistent fever over 7 days
ET intubation of infants	Establish rapport with children of different ages	Idiopathic hypertrophic subaortic stenosis (hypertrophic cardiomyopathy)
ET intubation of young children	Mobilizing resources for nonaccidental trauma	Psychosocial differences of pediatric patients based on developmental milestones
Cervical spine clearance based on age	Common problems of NICU graduates-necrotizing enterocolitis: medical and surgical	Meckel's diverticulum
Pediatric burn management	General administrative, legal and ethical issues involved with treating children in an ED	Manage special-needs children-cerebral palsy
Pediatric trauma resuscitation	Recognize and manage-Henoch-Schonlein purpura	Biliary atresia
Age appropriate neurologic assessment	EMS transport of children	Recognition of how pediatric emergencies provoke higher levels of anxiety among ED physicians
Recognition of emergencies in febrile sickle cell disease	Higher risk for medical error in pediatric v. adults	Pediatric dosages for ibuprofen
Myocarditis	Leukemia	Pediatric dosing for adenosine
Slipped capital femoral epiphysis	Common traumatic conditions-penetrating trauma	Pediatric dosage of epinephrine (anaphylaxis)
Ingested foreign bodies	Neonatal hypoglycemia	Pediatric dosage of ketamine
Pyloric stenosis	Musculoskeletal injuries by age group	Pediatric dosage of epinephrine (code)

Recognition of pediatric heart failure	Use of head/cervical spine rules	Pediatric dosage of morphine
Postoperative congenital heart disease child	Use of fracture rules such as Salter-Harris	Pediatric dosing for amoxicillin (high dose)
Detecting physical abuse through history and physical examination	Common traumatic conditions-blunt abdominal trauma	Nasal agents-fentanyl/versed
Foreign-body removal - nose	Constipation	Assessing child for aspirated foreign bodies

3. This is a list of topics that reached consensus from round 1 for being covered in general EM curriculum. Please review this list and if there are topic(s) if you think there is a topic here in error, please indicate in the box below.

Recognize patients who need higher levels of care than the ED, i.e. NICU or PICU	Laceration repair (suturing) with consideration for child's age	Stabilization involved with common pediatric overdose/poisoning-propofol
Place an intraosseous line	Interpretation of chest X-ray	Interpretation of radiographs of soft tissue neck
Bag-valve-mask ventilation (stress over ET intubation)	Immobilize common pediatric fractures using splinting	Foreign-body removal from-soft tissue
Pediatric airway adjuncts	Tracheostomy tube placement	Diagnostic US-FAST scan
Resuscitation strategies involving blood, fluids and glucose	Ventilator management	Wound management
Cardioversion/defibrillation	Matching appropriate agent for the procedure	Complete eye examination (including slit-lamp examination)
Noninvasive airway management (NFNC, nasal CPAP, optiflow, BiPAP)	Place an IV line	Nasal packing
Conversion of SVT	Using succinylcholine for ketamine assoc. laryngospasm rescue	Pediatric dosages for poly-pharmaceutical ingestions in adolescents
Indications for emergent blood transfusions in patients with shock	Needle decompression of a pneumothorax	Pediatric devices-insulin pump
Ability to trouble shoot common pediatric medical devices-tracheostomy	Effective communication with parents	Antibiotic stewardship
Common traumatic conditions-head injury, blunt head trauma, concussion with return to play instructions	Diagnosis and management of Neisseria	ENT emergencies-epistaxis
Major traumatic brain injury	Pediatric Adv Life Support	Weakness or failure to thrive

	(PALS)	
Respiratory distress	Use of computerized tomography for scans of the head	Neurologic emergencies-stroke
Retropharyngeal abscess	Pediatric basic life support (BLS)	Manage of ocular emergencies-trauma
Altered mental status	Recognition of the "high-stakes" milieu of pediatric emergencies	Pediatric devices-gastrostomy tube
Minor head injury	Incision and drainage of abscess	Manage of ocular emergencies-foreign bodies
SVT	Reduction of paraphimosis	Gastrostomy tube placement
Pharyngitis	Pericardiocentesis	Conditions/criteria for transfer to specialty care
Epidural hematoma	Interpretation of radiographs of MSK	Headache
Management of sickle cell pain crisis	Delivering bad news	Stabilization of caustic ingestions (tide pods)
Radiology-determination of when to use imaging: risks and benefits	External cardiac pacing	Pyelonephritis
Fever and neutropenia	Effective communication with consultants	Ataxia
Preseptal/orbital cellulitis	Chest pain	Discrimination between MSK patients who need urgent consult vs. those who can be referred to outpatient care
Intra-abdominal surgical emergencies	Recognize and manage-viral exanthems	Gastroenteritis
Anaphylaxis	Viral syndromes	Suicide
Resources for evaluation of children suspected of suffering child abuse and neglect	Upper and lower urinary tract infections	Acute presentations-pneumonia, viral and bacterial
Laryngeal mask airway	Encephalitis	Environmental emergencies-heat stroke/heat exhaustion
Needle cricothyrotomy	Initial management of metabolic diseases	Environmental emergencies-hypothermia
Postoperative tonsillectomy	Syncope	Diagnosis and management of Rocky Mountain Spotted Fever

Appendix S3. Round 3 – Delphi Instrument

We have reached consensus on 92 PEM topics and 98 General EM topics. Thank you again for your help at each step of the process. This will take <5 minutes!

We are conducting the FINAL round of Delphi consensus. The goal of this round is to ensure that all topics are correctly sorted. The topics reached consensus at 80% agreement, so the list below may not exactly mirror your individual responses.

We are asking you to select topics that are obviously and/or egregiously placed on the wrong list.

1. This list represents the PEM specific topics.

Please select/circle any topic that should NOT be on the PEM specific list.

PEM topic - these topics are specific in to a pediatric population or have clinically significant differences in diagnosis or management (e.g. pyloric stenosis - this occurs only in the infant age group or pediatric sepsis - underlying differences in physiology lead to distinctly different management).

1 Signs and Sxs	Recognize a sick child	Jaundice	Recognition of normal vital signs based on age	Vomiting-by age group	Constipation	The approach to the febrile or septic neonate	Diagnosis of children with a pediatric/toddler limp	Detecting physical abuse through history and physical examination	Red stool	Anat/physio differences based on developmental stages
2 Abdo	Intussusception	Malrotation volvulus	Ingested foreign bodies	Pyloric stenosis	Common problems of NICU graduates- NEC	Meckel's diverticulum	Biliary atresia			
3 Cards	Neonatal congenital cardiovascular presentations	Myocarditis	Recognition of pediatric heart failure	Idiopathic hypertrophic subaortic stenosis (hypertrophic cardiomyopathy)	Postoperative congenital heart disease child					
4 Derm	Recognize/manage-Henoch-Schonlein purpura									
5 Endo/Metab	Acute DKA and hyperglycemia	Neonatal hypoglycemia	CAH shock in neonates							
6 Enviro	none									
7 HEENT	Acute otitis media	Foreign-body removal - nose	Foreign-body removal - ear	Management of ocular emergencies-tips and tricks for exam						
8 Heme	Recognition of emergencies in febrile sickle cell disease	Leukemia	Recognition of uncommon but serious hematologic disorders							
9 Immune	Know signs and symptoms of Kawasaki's									
10 Infectious	Pediatric sepsis	Persistent fever over 7 days	Vaccines and schedule							

11 MSK	Slipped capital femoral epiphysis	Key decision rules-Kocher criteria for septic joint	Musuloskeletal injuries by age group							
12 Neuro	Febrile seizures	Age appropriate neurologic assessment	Manage special-needs children-cerebral palsy							
13 OB/gyne	None									
14 Psych/Behav	Common signs and symptoms of physical abuse in children	Diagnosis and management of sexual abuse	Manage special-needs children-autism	Psychosocial differences of pediatric patients based on milestones						
15 Renal/GU	None									
16 Pulm	Asthma	Bronchiolitis	Treatment of acute presentations of cystic fibrosis	Common problems of NICU graduates-bronchopulmonary dysplasia	Assessing child for aspirated foreign bodies	Croup				
17 Tox	Diagnosis and stabilization involving small dose ingestions dangerous or fatal to toddlers	Pediatric dosages of acetaminophen	Pediatric dosages for ibuprofen	Pediatric dosing for adenosine	Pediatric dosage of epinephrine (anaphylaxis)	Pediatric dosage of ketamine	Pediatric dosage of epinephrine (code)	Pediatric dosage of morphine	Pediatric dosing for amoxicillin (high dose)	Nasal agents-fentanyl/versed
18 Trauma	Cervical spine clearance based on age	Pediatric burn management	Common traumatic conditions - blunt abdominal trauma	Unique patterns of injury in the pediatric spine	Reduction of radial head subluxation (nurse maid's elbow)	Use of fracture rules such as Salter-Harris	Use of head/cervical spine rules	Recognition of fracture patterns that suggest abuse		
19 Skills/proc	ET intubation of infants	ET intubation of young children	Airway management for respiratory failure	Lumbar puncture in neonates	Neonatal resuscitation	Chest tube placement on infants	Chest tube placement on young children	Pediatric trauma resuscitation	Application of rules for fluid resuscitation in children, 20ml/kg bolus	How to successfully perform a physical examination in varying ages
	Application of strategies for performing accurate PE on a difficult child	Basic airway maneuvers, including positioning based on anatomy	Application of rules for fluid resuscitation in children 4.2.1 rule for maintenance of IV fluid	Install umbilical artery or vein catheters	Invasive airway rescue options-transtacheal jet	Calculate bolus and maintenance fluids for children based on age	How to take a peds specific history: pertinent positives such as birth/weights			
20 Other	Laws pertaining to child abuse and neglect	General administrative, legal and ethical issues involved with treating children	Mobilizing resources for nonaccidental trauma	Establish rapport with children of different ages						

2. This list represents the general EM topics.

Please select any topic that should NOT be on the general EM list.

EM topic - the underlying pathophysiology and treatment is similar between adults and pediatrics and could be included as part of a teaching session on the topic (e.g. anaphylaxis - though there are slight variations the foundation of treatment and diagnostic criteria are the same for all ages).

1 Signs/Sxs	Recognize patients who need ICU care	Intra-abdominal surgical emergencies	Chest pain	Syncope	Discriminate between common and deadly rashes	Weakness or failure to thrive	Ataxia	Respiratory distress
2 Abdo	Gastroenteritis	Appendicitis	Pediatric device-G tube	G tube placement				
3 Cards	SVT							
4 Derm	Recognize and manage-viral exanthem							
5 Endo/Metab	Initial management of metabolic diseases	Pediatric devices-insulin pump						
6 Enviro	Environmental emergencies-heat stroke/heat exhaustion	Environmental emergencies-hypothermia						
7 HEENT	Retropharyngeal abscess	Pharyngitis	Preseptal/orbital cellulitis	Postoperative tonsillectomy	Interpretation of radiographs of soft tissue neck	ENT emergencies-epistaxis	Ability to trouble shoot pediatric devices-tracheostomy	Tracheostomy tube placement
8 Heme	Management of sickle cell pain crisis	Fever and neutropenia						
9 Immune	Anaphylaxis							
10 Infectious	Diagnosis and management of Neisseria	Viral syndromes	Antibiotic stewardship	Diagnosis and management of Rocky Mountain Spotted Fever				
11 MSK	Determine which MSK patients need ED consult vs. referral							

12 Neuro	Altered mental status	Meningitis	Encephalitis	Neurologic emergencies-stroke	Headache									
13 OB/gyne	None													
14 Psych/Behav	Suicide													
15 Renal/GU	Glomerular nephritis	Reduction of paraphimosis	Upper and lower urinary tract infections	Pyelonephritis										
16 Pulm	Pediatric airway adjuncts	Noninvasive airway management (NFNC, NIPPV)	Acute presentations-pneumonia, viral and bacterial	Needle decompression of a pneumothorax										
17 Tox	Matching appropriate agent for the procedure	Using succinylcholine for ketamine assoc. laryngospasm rescue	Stabilization involved with common pediatric overdose/poisoning-propofol	Pediatric dosages for polypharmaceutical ingestions in adolescents	Stabilization of caustic ingestions (tide pods)									
18 Trauma	Common traumatic conditions-head injury, concussion, return to play	Major traumatic brain injury	Minor head injury	Epidural hematoma	Use of computerized tomography for scans of the head	Common traumatic conditions - penetrating trauma	Manage of ocular emergencies-trauma							
19 Skills/proc	Place an intraosseous line	Bag-valve-mask ventilation	Laryngeal mask airway	Needle cricothyrotomy	Lumbar puncture	Laceration repair (suturing) for child's age	Interpretation of chest X-ray	Place an IV line	Incision and drainage of abscess	Pericardiocentesis	Cardioversion/defibrillation	Conversion of SVT	External cardiac pacing	
	Wound management	Foreign-body removal from soft tissue	Complete eye examination (including slit-lamp)	Nasal packing	Manage of ocular emergencies-foreign bodies	Resuscitation strategies involving blood, fluids and glucose	Ventilator management	Indications for emergent blood transfusions in shock	Immobilize common pediatric fractures using splinting	Diagnostic US-FAST scan	Pediatric Adv Life Support (PALS)	Pediatric basic life support (BLS)		
20 Other	Resources for evaluation suspected child abuse and neglect	Higher risk for medical error in peds v adults	Radiology determination of when to use imaging; risks and benefits	Recognition of the "high-stakes" milieu of pediatric emergencies	Interpretation of radiographs of MSK	Recognize pediatric provoke more anxiety among ED physicians	Discriminate dispo home v. admit							
	Conditions/criteria for transfer to specialty care	EMS transport of children	Delivering bad news	Effective communication with consultants	Anticipatory guidance to parents	Effective communication with parents								