Objectives – Junior Residents – all RIs and FM-RII

The Junior Resident is expected to function as a:

Medical Expert

1) Defines triage categories and describes the use of triage in the Emergency Department (ED)
2) Describes the basic pathophysiology and describes presentations of common pediatric problems in the ED (see checklist)
3) Elicits an age-appropriate, directed, concise and accurate history
4) Performs a focused physical exam related to the chief complaint and modified according to the patient's age, gender and problem
5) Identifies which children need immediate care
6) Generates a basic differential diagnosis and describes preliminary management strategies for common chief complaints (see checklist)
7) Attends acute cases as an observer
8) Describes and/or demonstrates proficient and appropriate use of required skills (see checklist)
9) Seeks appropriate consultation from other health professional and recognizes limits of own expertise

Communicator

1) Participates as an effective member of the ED team (physicians, nurses, coordinators….)
2) Conveys relevant information and explanations to patients, families and relevant professionals
3) Develops rapport, trust and ethical therapeutic relations hips with patients and families
   - Respects families' concerns and questions and effectively communicates the plan to the family
   - Respects patient confidentiality
4) Completes written documentation of the history, physical exam, investigations, results, final diagnosis and plan

Collaborator

Interacts effectively and appropriately with consultants

Manager

1) Uses the ED computerized system to help coordinate patient care
2) Demonstrates the ability to work efficiently by seeing a minimum average number of patients as follows:
   a) Medical ER: 1 patient/hour
   b) Surgical ER: 2 patients/hour

Health Advocate

Demonstrates the ability to be an advocate for the patient and his/her family

Scholar

1) Displays an interest in improving his/her knowledge by attending teaching rounds (minimum of 75% attendance is expected)
2) Reads and obtains knowledge about the topics listed on the checklist and applies this information to the patients that s/he sees in the ED

Professional

1) Displays integrity and honesty
2) Arrives for shifts and teaching rounds on time
3) Displays sensitivity and respect for diversity
4) Informs the chief medical resident of all missed shifts
5) Demonstrates a sense of responsibility for own patients (e.g. responsible for following up patients results, signing over patient care when leaving the department…)
6) Understands the principles of ethics and applies this to the clinical setting

Evaluation – for details on how the resident is evaluated, please refer to the ED orientation sheet

LEARNING CHECKLIST – JUNIOR RESIDENT

Knowledge of basic pathophysiology and presentations of the following:

Allergy:
- D Anaphylaxis

Anesthesia:
- D Conscious sedation – indications and pharmacology
- D Local anesthesia
- D Non-pharmacological approach to pain & anxiety

Cardiovascular:
- D Cardiovascular exam – distinction between normal and abnormal
- D ECG reading
- D Vital signs – normal values for each age group

Child Abuse:
- D Physical and sexual abuse – common presentations

Dermatology:
- D Atopic dermatitis
- D Pediatric exanthems

Endocrine:
- D Diabetes Mellitus

Gastroenterology:
- D Dehydration
- D Gastroenteritis
- D IBD
- D Intestinal obstruction

Gynecology:
- D Pregnancy
- D Sexually Transmitted Infections/Pelvic Inflammatory Disease

Hematology:
- D Anemia
- D Idiopathic Thrombocytopenia Purpura (ITP)
- D Leukemia/lymphoma
- D Sickle Cell Disease

Infectious Disease:
- D Cellulitis
- D Cervical adenitis
- D Croup
- D Fever without focus
- D Impetigo
- D Meningitis
- D Osteomyelitis
- D Otitis Externa
- D Otitis media
- D Pharyngitis
- D Pneumonia
- D Septic arthritis
- D Sepsis – neonatal
- D Sinusitis
- D Urinary tract infection

Nephrology:
- Acid-base disturbances
- Electrolyte disturbances

Neurology:
- Seizures
  - Afebrile
  - Febrile

Ophthalmology:
- Conjunctivitis
- Corneal abrasions

Orthopedics:
- Radial head subluxation
- Salter-Harris classification

Psychiatry:
- Depression and Suicide

Pulmonary:
- Asthma
- Cystic fibrosis – emergency complications

Radiology:
- Abdominal series – basic approach
- C-spines – indications and basic approach
- Chest X-Rays – basic approach
- Lateral neck x-ray – basic approach
- Skull series – indications

Resuscitation:
- Respiratory failure, shock and cardiorespiratory arrest – definitions and recognition

Rheumatology
- Kawasaki disease

Toxicology:
- Acetaminophen intoxication
- Salicylate intoxication
- Ingestion – basic approach (ABCDE)

Trauma:
- ATLS principles – primary & secondary surveys
- Bites – human and animal
- Burns – distinction of severity, management of 1^{o}
- Glascow Coma Score
- Head injury – minor
- Secondary survey – components
- Wound management – cleaning and dressings

Urology:
- Balanitis
- Phimosis

Approach to:

- D Abdominal pain
- D Altered level of consciousness
- D Apneic/cyanotic episode
- D Choking episodes
- D Constipation
- D Cough
- D Crying in infancy/childhood
- D Diarrhea
- D Dysuria
- D Earache
- D FTT
- D Feeding problems in infancy
- D Fever – basic principles, teaching families
- D Foreign body - ingestion and aspiration
- D Headache
- D Hematuria
- D Limp
- D Neck stiffness
- D Proteinuria
- D Rash
- D Rectal bleeding
- D Red eye
- D Respiratory distress - mild
- D Scrotal pain/swelling
- D Sore throat
- D Stridor
- D Swollen/painful joint
- D Syncope
- D Urinary frequency
- D Vaginal discharge
- D Vomiting
- D Weakness
- D Wheezing

Skills: (knowledge of OR performance in simulated setting OR performance in real setting)

- D Bag/mask ventilation
- D C-spine immobilization
- D Chest compressions
- D Defibrillation
- D ECG – performing a 12-lead recording
- D Eye irrigation
- D Flourescein staining of eye
- D Fractures – recognition of fractures radiologically
- D Gastric tube placement and lavage
- D Intraosseous insertion
- D Intravenous access
- D Joint exam
- D Local anesthesia administration
- D Lumbar puncture
- D Lacerations (simple) – glue, simple suturing
- D Monitor hook-up – saturation, cardiac
- D NG tube placement
- D Neurological exam at various ages
- D Nursemaid's elbow reduction
- D Oximetry – performance and interpretation
- D Splinting
- D Urinalysisi interpretation
- D Urine catheter placement
- D Visual screening exam at various ages

Resuscitation rounds: Objectives

After completing the four-hour program, the learners should be able to:

Overview

- Describe and demonstrate the ABCDE of advanced resuscitation for infants and children
- Discuss the assess-categorize-decide-act approach
- List the components of the general assessment (pediatric assessment triangle)

Respiratory

- Describe how the anatomy and physiology of the airway and respiratory system of infants and children differ from adults
- Explain what pulse oximetry measures and describe the limitations of this tool
- Explain what exhaled C02 detectors measure and their limitations
- Describe common oxygen delivery systems and their effectiveness in delivering different concentrations of oxygen
- List examination findings consistent with respiratory compromise
- Define respiratory distress and failure
- Describe the sequence of interventions for foreign-body airway obstruction (FBAO) in infants and children
- Choose appropriate oropharyngeal and nasopharyngeal airways
- Explain the differences between a self-inflating and a flow-inflating manual resuscitator and describe the advantages and disadvantages of each device
- Describe the technique of bag-mask ventilation and tracheal intubation
- Describe techniques for decompression of a tension pneumothorax
- List causes of a sudden deterioration in an intubated patient (DOPE pneumonic)

Shock

- Define shock
- Identify children with hypotensive shock at various ages
- Describe the clinical signs of systemic hypoperfusion
- Discuss the principles of acute fluid resuscitation for circulatory shock and select appropriate resuscitation fluids for a child in shock
- Define cardiopulmonary failure and cardiac arrest
- Discuss the pharmacology of medications for cardiac arrest and their indications and which medications to administer for treatment of a child in cardiac arrest, recognizing the epinephrine is the drug of choice (Of note: need to know dose of Epinephrine)
- Describe the risks and benefits of intraosseous (IO) cannulation
- Describe IO access technique

Rhythm Disturbance

- Recognize features of unstable rhythms requiring immediate intervention
- Describe initial stabilization of the child with an unstable rhythm
- Differentiate supraventricular tachycardia (SVT) from sinus tachycardia (ST)
- Describe indications for vagal maneuvers and use of these techniques for treatment of SVT with adequate perfusion
- Describe how and when to provide electrical therapy for arrhythmias: defibrillation, and synchronized cardioversion
- Select appropriate medication for treatment of symptomatic bradycardia, tachycardia and arrest rhythms

RESUSCITATION ROUNDS: AIRWAY

Anatomy

- Tongue is larger
- Epiglottis:
    - Narrow and angled (slanted) away from the axis of trachea
    - Often long and floppy
- Larynx:
    - The superior portion of larynx in located at C3-C4, reaches adult location after age 5 at C5-C6
    - Conical shape in infants making the CRICOID ring the narrowest portion
    - Vocal cords slanted anteriorly, making passage of ETT more difficult

Physiologically

- Higher metabolic rate in young children (thus higher O2 conumption)
- Decreased functional residual capacity compared to adults

all contribute to decreased time for desaturation in young children

O2 delivery systems

1. Nasal prongs (max 2 LPM, up to 40%)
2. O2 mask - 30-60%
3. Partial rebreather (mask + reservoir) - 50-60%
4. Non-rebreather (valves on mask + reservoir) - 100%

Airways

Oropharyngeal Airway

- Only use in an unconscious patient because it can stimulate gag reflex
- Size - corner of mouth to angle of mandible
    - if it is too big it can obstruct the larynx
    - if it is too small it can push the tongue back

Nasopharyngeal Airway

- Can be used in a conscious patient
- Length - tip of nose – tragus of ear

Ventilation mask

- Extend from the bridge of the nose to the cleft of the chin
- Envelops the nose and mouth but avoids eyes
- "EC" clamp technique to hold mask on face with good seal

Airway

Bags

1. Self inflatable (AMBU bags)
    - Note that cannot reliably proved free flowing oxygen with these bags
2. Flow inflating bags (anesthesia bags)
    - CAN provide free flow O2 and can get a sense of lung compliance
    - Only inflates if have adequate seal thus requires more skill to use

Tracheal tube

- Uncuffed (age/4 +4)
- Depth from lips – age/2 + 12, or as rule of thumb, 3 x the ETT size

ex. 8-year-old child requires a 6-0 ETT to be placed at ~18 cm from lips

Intubation Blades

1. Straight blade used in infants (<1 year) – enables to lift the large, floppy epiglottis with better visualization of the cords
2. Curved blade – To be inserted into the valeculla which then pulls the epiglottis out of the way for visualization of the cords

OF NOTE, there are no hard rules on which blades to use. Use the one you are more comfortable with. Size of blade needed may be estimated by the distance of patient's chin to angle of mandible – when in doubt, go longer!

Confirmation of tube placement

Primary:
- bilateral chest rise
- water vapour in tube
- breath sounds heard

Secondary:
- end tidal CO2 (purple→yellow)
- O2 saturation
- chest X-ray

Causes of acute deterioration in an intubated patient

"DOPE"
- D - displacement
- O - obstruction
- P - pneumothorax
- E - equipment failure

Basic Cardiopulmonary Life Support: Please review pediatric BCLS on the photocopy of PALS card (ex. Ventilation: compression ratios, etc…)

PALS

AACN
AMERICAN ASSOCIATION OF CRITICAL-CARE NURSES

American Heart Association
Learn and Live.

Summary of ABCD Maneuvers for Infants, Children, and Adults

Maneuver	Adult Lay rescuer: ≥8 years HCP: Adolescent and older	Child Lay rescuer: 1 to 8 years HCP: 1 year to adolescent	Infant Under 1 year of age
ActivMe Emergency rnponM	Activate when victim lafound unresponsive	Activlite alter perfotmlng 5 cycof CPA For sudden, wltnesaed coHapae, activate after	
	llT1let 5 cy.;lee (2 mtnut.-) olCPR		
A1nn11r	Heedtlll-dln lift (HCP: IUljMCted Inluma, uea jaw thfual)		
2br.au.. at 1sec- Initllll	ondlbreath	2 eff9c-;_	
HCP: Reacue breath-ng without chellt compf9111ona	10to 12 llrMllWmin (approximately 1 breath fNery 5 to 8 seoonda)	15 to 20 t:neths/mln (approximately 1b<eath - fNery 3 to 5 seconds)	
HCP: Aeacue bfeattMl with adv.need Mway	8 to 10 bremhs/mln (approxlmately 1 breath every 8 to 8 seconds)		
F0<91gn-body allway obatrucdon	A b d o m inalthrum		re;ck slaps and h..; thrusta
Clroullltioft PuleechKk (s10 MC)	C-ad (HCP CM uea femotlll Inchi		&.chilli ot femcnl
Comp-eaelan lenct-martca	cem.r of cheat.	nlppiee	Juat below nipple line
Corn "*'1od P\1111 hlrd Ind 1111 Allow compi.t. r900l	2 Hellol 1 lwlll.other hind on top	2 HMdl: Heal ol 1 hind with HCond on top 1Hencll Heel of 1 hindonly	1*CUer: 2 fingei'l HCP, 2 reec....: 2 thuml>-enclrcllng h.ndt
Comp-eaelan d..,ih	1 to 2 lnctMe	Apptoxlmatlly liito	the depth al the cn.t
Compreealon 1111*	Approxlmelly 10Q(mM _		
tlonr.uo	(1 ot 2 --->	Helll 1&:11 ea -..,..	
eomix-ion-ven11111-MD	311:9 Use adult pads. Do not use chlld pedal child system HCP: For out-of-hospital arrwt may provide 5 cy.;les/2 mlnut• of CPR btJfot99/lock If reeponse time >4 to 5 mlnutee and aml9t not witnessed.	30:2 (9lr9e HCP: UHasoon aa avalable for sudden collapse and In-hoepital All: Alter approxl-mately 2 mlnut• of CPA (out-of-hospital). Use chld pada/chlld system for chld 1 to 8 yeera If avallable. If chld pads/system not available, use adult AEO and pads.	No recommendation for Infants <1 y- of age

Vital Signs in Children

Hurt Rate (l'llt9/mln)

Age	Awake Rate	Sleeping Rate
N-bom to 3montha	85 to 205	80 to 160
3 months to 2 yea/9	1oo to 190	75 to160
2 to10 years	60 to 140	60 to 90
>10 years	60 to 100	50 to 90

Respiratory Rate (breaths/min)

Age	Rate
Infant	30 to 60
Toddler	24 to 40
PretChooler	22 to 34
School-age child	18 to 30
Adoleecent	12 to 16

Definition of Hypotension by Systolic Blood Pressure and Age

Age	Systolic Blood Pressure
Term neonat• (0 to 28 days}	<60mm Hg
Infants (1 to 12 month•)	<70mm Hg
ChildWI 1 to 10 years (5th BP peteentlle)	<70 mm Hg + (age Inyears x 2) mm Hg
Childl'WI >10 yeat9	<90mm Hg

Modified Glasgow Coma Scale for Infants ar,d Children

	CNlll	lnf8nl	Icore
Eye opening	SponbWleoul	Spontaneoua	4
	To speech	To speech	3
	To pain only	To pain only	2
	No l'8lf?O!l9!	No111f10!11!	1
v.t.I	Confused	Irritable crlea	4
Be.e	Oriented. appropriate	Cooe tWld balXllea	5
	Inappropriate words	Crlel to pain	3
	Incomprehensible soundt	MolWllto pain	2
	No reeponae	No l1lfl0!1I!	1
a. motor reeporwe"	Ob8yt COllV1l8l1dt	Movll sponbnou8ly and	6
	Locallae pailful stmu	Wlthdrawl to touch ..	5
	Wtthctaws Inreepo11911 to pain	Wlthdraw9 In reepo11911 to pain	4
	FlexJon in '98pOl'l8eto pain	Abnormal ftexlon posture to pain	3
	Extensk:ln Inresponse to pain	AbnonnaLaxl«l9lon posture to pain	2
	No l'8lf?O!l9!	No l1lfl0!1I!	1

*W pa11en1 1a intubmd. LrlCOll9Cioo.ll or t111mo111rnpcmnt pan lhl9aca1e 1o motor

J9llPO'*. Molll< ahould be cnfuly MUad.

SHOCK

Definition

Inadequate delivery of oxygen and nutrients to tissue relative to tissue metabolic demand
Goal of treatment is to prevent end-organ injury and halt progression to cardiopulmonary failure and cardiac arrest

Factors affecting oxygen delivery to tissues

1. Sufficient O_2 in blood
2. Adequate flow of blood to tissues (cardiac output)
3. Adequate matching blood flow to local tissue metabolic demand

- Cardiac Output (CO) = Stroke Volume (SV) x Heart Rate (HR)
- SV depends on preload, contractility, afterload

Signs and Symptoms

1. Brain perfusion: altered level of consciousness/irritability
2. Skin Perfusion: cool, mottled skin (except in warm shock), delayed capillary refill
3. Renal Perfusion: decreased/absent urine output

Mechanisms for compensation in shock

1. Increased heart rate (tachycardia)
2. Increased systemic vascular resistance (cold/pale skin, delayed cap refill, weak pulses, narrow pulse pressure)
3. Increased splanchnic vascular resistance (oliguria, vomiting, ileus)
4. Increased contractility
5. Increased venous tone

- Blood Pressure (BP) depends on Systemic Vascular Resistance (SVR) + CO

Catergorizing shock (see table next page)

- Compensated (BP maintained) vs. hypotensive
- Compensated to hypotensive shock may take hours
  - BUT Hypotensive shock to cardiac arrest may take just a few minutes…
- Therefore, need to RECOGNIZE shock early!
- Children 1-10yo, <u>minimum systolic BP = 70mmHg + (2 x age)</u>

Management of Shock

- Positioning: Trendelenburg, find the most comfortable position to decrease anxiety
- Oxygen administration
- Vascular access: IV or IO

Fluid resuscitation:

- Bolus <u>20ml/kg Normal Saline</u> over 5-20 minutes; after 40-60ml/kg consider blood products (especially in trauma) and/or inotropes (especially in septic shock)
  If cardiogenic shock, poisonings, or DKA, give 5-10ml/kg slowly (over 10-20 minutes)

Shock

Type of Shock	Preload	Contractility	Afterload	Signs/symptoms
Hypovolemic	Decreased	Normal or increased	Increased	Tachycardia, weak pulses, cold, changes in mental status
Distributive (septic, anaphylactic, neurogenic)	Normal or decreased	Normal or decreased	Variable	Warm shock (wide pulse pressure) or cold shock (narrow)
Cardiogenic	Variable	Decreased	Increased	Signs of CHF, cyanosis
Obstructive (tamponade, tension pneumothorax, ductal dependent CHD, pulmonary embolism)	Variable	Variable	Variable	Variable

Instructions for IO insertion:

Site: below tibial tuberosity, above distal femur or distal tibia, Anterior/posterior superior iliac spines, ….
Needle: at least 18 gauge spinal or hypodermic needle
Insert and aim away from growth plate/joint
Use: may infuse any IV products through IO

- Monitoring and reassessments: oxygen, HR, BP, mental status, temperature, urine output
- Ancillary tests: CBC, electrolytes, lactate, calcium
- DON'T FORGET TO CHECK AND CORRECT HYPOGLYCEMIA
  - Need to know: 5-10 cc/kg IV D10W bolus

Pharmacologic support

- Inotropes: dopamine, epinephrine, norepinephrine, dobutamine
- Phosphodiesterase inhibitors: milrinone, inamrinone
- Vasodilators: nitroglycerin, nitroprusside
- Vasopressors: epinephrine, norepinephrine, dopamine, vasopressin

Important medication to know:
EPINEPHRINE **0.01 mg/kg (0.1ml/kg) 1:10 000 IV, IO bolus**

Rhythm Disturbances

General Approach

- Is rhythm stable or unstable?
- Is pulse rate slow, fast, or absent?
- If fast pulse, are ventricular complexes wide or narrow?
- Is there a diagnostic pattern on the ECG?

What is an unstable rhythm?

- May be associated with circulatory instability or may deteriorate and cause instability (ie. compensated shock, hypotensive shock, cardiopulmonary failure)
- Unstable rhythms require emergency therapy

What is a slow, fast, or absent pulse?

- Slow = bradyarrhythmia
- Fast = tachyarrhythmia
- Absent/arrest = pulseless arrest/collapse rhythms

Rate	Infant (<1 yo)	Child
Fast	>220	>180
Slow	<80	<60

Bradycardia

- Most common pre-arrest rhythm in children
- Leading cause of symptomatic bradycardia is tissue hypoxia
- Urgent treatment needed if HR slow and evidence of shock (eg. poor systemic perfusion, hypotension, altered LOC) and/or respiratory distress/failure
- Management:
    - ABCs
    - If no cardiorespiratory compromise, support ABCs
    - If cardiorespiratory compromise despite adequate ventilation and oxygenation, then:
        - 1) CPR; 2) Epinephrine; 3) Atropine (if AV block, increased vagal tone, or cholinergic drug toxicity); 3) Consider pacing

- Remember to identify and treat reversible causes:

Hypovolemia	Toxins/poisons/drugs
Hypoxia	Trauma (hypovolemia, increased ICP)
Hypothermia	Tamponade, cardiac
Hypo/perkalemia	Tension pneumothorax
Hydrogen ion (acidosis)	Thrombosis
Hypoglycemia	
Heart block/Heart transplant	

Rhythm Disturbances

Narrow Complex Tachyarrhythmias

- Sinus tachycardia (ST), Supraventricular Tachycardia (SVT), atrial flutter (uncommon in pedes)

Characteristic	Sinus tachycardia	SVT
History	Gradual onset (fever, pain, dehydration, hemorrhage)	Abrupt onset or termination; infants have CHF symptoms, children have palpitations
Physical exam	Signs of underlying cause (fever, hypovolemia, anemia)	Signs of CHF (rales, hepatomegaly, edema)
Heart rate	Infants <220/min Children <180/min	Infants >220/min Children >180/min
Monitor	Beat to beat variability P waves present/normal PR constant R-R variable QRS narrow	No beat to beat variability P waves absent/abnormal PR cannot be determined, or short R-R often constant QRS usually narrow; uncommonly wide

- See management algorithms for tachycardia with pulses and poor perfusion and algorithm for adequate perfusion
- Management of ST: search and treat cause
- Management of SVT:
- 1) Consider vagal maneuvers (no delays!): ice on forehead/eyes/bridge nose, blowing through straw, rectal temperature, bear down, hold breath with ice on face
- 2) If IV access available, adenosine 0.1mg/kg (note: $t_{1/2}$ <10 sec so give rapidly), double 2nd dose
- 3) Or, *synchronized* cardioversion 0.5 to 1J/kg, increase to 2J/kg
- 4) After "expert consultation", amiodarone 5mg/kg or procainamide 15mg/kg
- 5) Identify and treat reversible causes

Wide Complex Tachyarrhythmias

- Ventricular tachycardia (VT), SVT with aberrant intraventricular conduction
- Assume wide complex rhythm is VT unless child is known for aberrant conduction
- Management (VT with poor perfusion)
- 1) *Synchronized* cardioversion 0.5 to 1 J/kg; increase to 2 J/kg
- 2) Amiodarone 5mg/kg or procainamide 15mg/kg or lidocaine 1mg/kg
- 3) Identify and treat reversible causes

Rhythm Disturbances

Pulseless Arrest

- Shockable = Ventricular Fibrillation/VT
- Non-shockable = Asystole or Pulseless Electrical Activity (PEA)
- VF/VT: give Non-synchronized shock 2 J/kg, 5 cycles or 2 minutes of CPR, recheck rhythm; if shockable, give 4J/kg, CPR and epinephrine 0.01mg/kg (0.1ml/kg of 1:10,000); continue with CPR, epinephrine (q3-5minutes), and consider amniodarone 5mg/kg, magnesium 25-50mg/kg for torsades de pointes, or lidocaine 1mg/kg
- Asystole/PEA: CPR, epinephrine 0.01mg/kg q3-5min, rhythm check after 5 cycles CPR or 2 minutes, and repeat
- Identify and treat reversible causes

- Key points for CPR:
  - Push hard and fast (100compressions/min)
  - Ensure full chest recoil
  - Minimize interruptions
  - Push 1/3 to 1/2 depth of chest
  - In infants, use 2 finger technique if single rescuer; 2 thumb-encircling hands if 2 rescuers

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Simulation

Tuesday Morning Resuscitation Rounds take place. (see attendance sheet schedule)

All Resuscitation Rounds are held in the ER crash room at the MCH-MER.

The goal of this final session is to reinforce the knowledge acquired in previous weeks and to practice treating sick children in a non-threatening (and fun) yet highly realistic environment. The session will start promptly at 8:30am to maximize the learning experience. Please make every effort to attend.

SIURGE INFORMATION SYSTEM
RESIDENTS WORKING IN ER

SIURGE IS THE PATIENT TRACKING SYSTEM WITHIN THE EMERGENCY DEPARTMENT, ITS USE IS **ESSENTIAL AND OBLIGATORY**.

EACH COMPUTER IN THE DEPARTMENT HAS A
'' SIURGE-TRAINING'' POWERPOINT PRESENTATION ON THE DESKTOP WHICH WE ASK ALL RESIDENTS TO FOLLOW. IF YOU REQUIRE ASSISTANCE PLEASE SPEAK TO AN ER CLERK.

Siurge

To: All ER residents and medical students

Re: Siurge as part of your evaluation

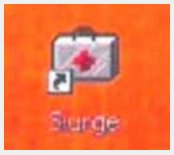
Data Quality Assurance

Siurge is a computerized patient tracking system used in the Emergency Department. The most apparent use includes patient flow management and tracking that is helpful organizing the ER on a moment-to-moment basis. The underlying and most useful part of Siurge is the data collection that the regular users do not see. This data can be analyzed and studied in many different ways, providing statistics for resource and time management, performance comparison, as well as quality assurance guidelines and expectations. All of this is hinged on the data being entered correctly.

Part of your evaluation

All patients you have seen are recorded in Siurge only if you enter the data. This will be cross-referenced with your orange evaluation sheets.

Shortcut on ER's Desktop for Powerpoint presentation and application



If you need any further information please do not hesitate to contact :
Robert Rodrigues at extension: 22697
or
by email: Robert.rodrigues@muhc.mcgill.ca

MCH Pediatric Emergency Department
Bedside Ultrasound

The use of bedside ultrasound as an adjunct to clinical assessment is a newly available tool in the MCH Pediatric Emergency Department. It is at the discretion of each attending staff to allow the use of bedside ultrasound on their patients.

As a resident, if you would like to perform an ultrasound exam on a patient, please ensure that you fulfill the following requirements:

1) Obtain permission to perform an ultrasound exam from the attending physician with whom you are working PRIOR to performing the exam
2) Obtain verbal informed consent from the patient and family PRIOR to performing the exam. Please refer to "Bedside Ultrasound - Informed *Consent*[11] below.
3) Clearly document in the chart that informed consent was obtained and document the results of your ultrasound exam.

Bedside Ultrasound - Informed Consent

When obtaining informed consent from patients and their families, the use and limitations of bedside emergency ultrasound must be explained. It must be made clear that:

1) Bedside ultrasound is considered an extension of the physical exam and is NOT equivalent to a formal radiologic study. Please explain what you are specifically looking for.
2) If the ultrasound is being performed purely for your own educational experience, this must be clearly disclosed to the families.

Any questions or concerns regarding the bedside ultrasound exam can be addressed to Dr. Sasha Dubrovsky at sasha.dubrovsky@mcgill.ca