PICU Orientation Manual For Residents

CHILDREN'S HOSPITAL AND MEDICAL CENTER

OMAHA, NE

Children's HOSPITAL & MEDICAL CENTER

We know children.

Welcome To The Pediatric Intensive Care Unit (PICU)!

Whether this is your first rotation here or your last, you are expected to review this manual BEFORE starting the rotation.

The PICU at Children's Hospital and Medical Center is the regions only PICU that provides continuous 24/7 coverage by board certified pediatric critical care physicians. This is the highest level of care that can be provided to sick children.

Because we take care of 'the sickest of the sick', so to speak, the PICU environment can be overwhelming to a resident who has never been here before. Relax! The curriculum, supervision, and staffing are designed so that you become an integral team member and learn how to assess and manage critically ill children.

The PICU will be challenging for you and you will be expected to build on the skills and knowledge you have acquired during your first (or second) year of residency. Like all rotations, there is a certain amount of clinical 'service' coupled with education. We guarantee that you will learn a lot during you rotation!

Unlike children who are seen in the clinic or who are admitted to the floor, children in the PICU frequently have multiple organ dysfunction/failure, significant congenital medical/anatomical abnormalities, and demonstrate complex pathophysiologic interactions.

Over the course of the month, it is our hope that you will become more comfortable assessing a critically ill child, instituting and prioritizing management strategies, and learn the systems-based approach.

Some info about us!

Admissions In 2008	~800
Average Daily Census	13
Average Length Of Stay	4-5 d
Cardiac Surgeries Per Year	~250

About This Manual (Last Updated Dec 2013)

This manual has been created to ease your transition into the PICU. You will find a surplus of information regarding your role as a resident in the PICU as well as other, hopefully, helpful information. Working in an unfamiliar environment can be stressful and this manual should prove to be beneficial in minimizing that stress. Along with the main content found in the body of each page, you will find helpful topics in the margins that should also be reviewed. Please carefully read the sections regarding presentations; this will make your presentations during rounds more effective and fluid. Any questions/suggestions regarding this manual should be sent to Kelly Kadlec at kkadlec@ChildrensOmaha.org. Enjoy!

Attendings

Rob N. Chaplin, MD
Medical Director, Transport
Kelly D. Kadlec, MD, FAAP
Medical Director, PALS
Director, Simulation
Andrew J. Macfadyen, MD
Director, Hand-In-Hand Program
Medical Director, Children's PICU
Prashant Joshi, MD
Intensivist/Toxicologist
Mohan R. Mysore, MD, FAAP, FCCM
Service Chief, Pediatric Critical Care
Medical Director, Children's PICU
Luke Noronha, MD
Intensivist/Pulmonologist
Medical Director, Respiratory Services
Bridget M. Norton, MD, FAAP
Medical Co-Director, ECMO
Jayesh C. Thakker , MD
Medical Director, Outreach
Medical Director, UNMC PICU
Edward J. Truemper, MD, MS, FAAP
Medical Director, Clinical Research

Mid-Level Practitioners

Amy Jorgenson, APRN
Ariann Lenihan, PA-C
Vanessa Ramos, PA

Nurse Manager

Marcie Peterson, RN, BSN, CCRN

Charge Nurses

Shaelee Clausen, RN, BSN, CCRN
Sally Nord, RN, BSN, CCRN
Bobbi Jo Pick, RN, BSN, CCRN
Tiffany Simon, RN, BSN, CCRN

PICU 'Team' Approach

All patients in the PICU have complex medical/surgical issues, with varying degrees of severity. Patient ages vary from newborns to adolescents. As a rule, an individual patient's clinical status is very dynamic, necessitating frequent assessment, adjustments, and re-adjustments in their medical care plans. Multiply one patient's changing clinical status, medical care, and varying degrees of acuity by 14 to 16 beds, the PICU can become very busy, even overwhelming at times. There are many people involved in the care and management of each patient, and the unit as a whole. These include physicians, nurses, nurse practitioners, pharmacists, dieticians, respiratory therapists, social workers only to name a few. Everyone has his or her individual role. Collectively, those individual roles coalesce into the PICU team whose goal is to provide unsurpassed care, in every aspect, to our patients. As a pediatric, medicine-pediatric, or emergency medicine resident, you are an essential and invaluable member to our team.

You Are Your Patient's 'Primary' Physician

As a physician, you are expected to have the passion and desire to want to provide care for a patient, make him/her more comfortable, and, ideally, make him/her better so she/he has the best possible medical outcome and quality of life. To achieve these goals, thorough knowledge of your patients, meticulous attention to all details of patient care, and frequent interactions with your patients is paramount. A patient's clinical condition is rarely, if ever, status quo. 'Taking care' of your patient does not merely involve acquisition of data and presenting them on rounds (although this is essential). Continuous assessment and re-assessment of your patients is mandatory. You will be expected to know what has been occurring with your patient(s) hour to hour, day to day, and week to week. During your PICU rotation, you will serve as your patients' 'primary' physician. Accordingly, please take ownership of your patients as you will be expected to with your own patients 1 to 2 years from now.

General Expectations

Whether this is your first time rotating in our PICU or a 'seasoned veteran', there are certain **expectations of all residents**:

1. When you are not on-call, you should arrive between 0630 and 0700. If you are on call, plan on arriving between 0700 and 0730 to give yourself extra time to round the following day. However, these are general rules. If the unit is full and you take a while to see patients and gather data, you should arrive early enough to be prepared for rounds. **You are ultimately responsible to manage your time, including ACGME duty hours.** We will not 'keep' you here and violate the duty hours.

2. **You will have primary responsibility** for the management of your patients (with appropriate supervision and support) from the time of admission until the time of transfer or discharge.

3. **When a patient arrives, you must see them.** After evaluation of all pertinent data and evaluation of a patient, you will be expected to formulate an assessment and plan in conjunction with the pediatric critical care team. Don't expect your assessment and plans to be perfect and always in-line with the attendings. That's OK!

4. After admission, **you will be expected to review all** recent diagnostic data, reassess your patient, reconsider your patient's clinical status, and adjust management plans continually.

5. **You will be expected to** educate, inform, and update patients and their families frequently. This is a priority for Family Centered Care and it strengthens communication, trust, and relationships between the PICU team and those for whom we provide care for.

Daily Schedule

0630-0700	Arrive in PICU
0700-0730	Pre-round on all cardiac surgery patients
0900-1130	Rounds
1200-1300	Noon Lecture
1300-1600	Patient Care
1600-1700	Checkout

Weekly Conferences/Lectures

Monday

Cardiac Care Conference
0845 to 0900

Tuesday

Patient Management Conference
0800 to 0900

Chronic Care Conference
1500 to 1600

Wednesday

Weekly Lectures
1300-1600

Friday

Pediatric Grand Rounds
0800 to 0900

General Expectations (Continued)

6. **You will be expected to participate in all aspects of rounds**, even if your patient is not the one being presented. Daily rounds are an integral process in the PICU; this is where you will learn the most during your rotation. Being involved in the discussion on patients that are not 'yours' is particularly important as you will be responsible for them frequently throughout the month (i.e. when your colleagues are in clinic, when you are in call). You should know other residents' patients just as well as you know your own.

7. **You will provide** compassionate, empathetic, and culturally sensitive communication with all families without any ethnic, religious, gender, medically/behaviorally disabled, or socioeconomic prejudice or bias.

8. **You will maintain each patient's medical information with the utmost confidentiality**. This includes all written information as well as discussions. All HIPPAA rules are enforced.

9. **You are expected to demonstrate ethical and professional behavior at all times** during your rotation. This includes, but is not limited to, timeliness, dress, and patient (and non-medical) discussions.

10. **You will be expected to gather information, examine, and formulate daily plans on each of your patients on a daily basis.** After rounds, once plans are established, you are expected to complete your notes. **There are no 'caps' on the number of patients or dictations in the PICU; if you are having difficulty, talk with your attending.**

11. **Checkouts to the afternoon covering resident and/or the on-call resident must provide sufficient information and details to the covering resident for appropriate medical management**. **Statements such as 'this patient is not usually mine' is not acceptable.** It is the responsibility of the leaving resident to provide a detailed checkout. It is also the responsibility of the covering resident to request more information if he/she feels the leaving resident's checkout is not complete or thorough.

My oldest daughter, Kennedy.

Family Centered Rounds

Rounds are conducted in the PICU twice a day. During rounds, parents are encouraged to participate, listen, and ask questions regarding the care of their child. This improves communication between staff and families; it also results in higher patient (i.e. parent) satisfaction.


Our second daughter, Kailyn, when she was hospitalized in Minneapolis for RSV. Not fun.

Educational Goals/Objectives

1. Your rotation in Children's PICU is designed to be an effective combination of service and education. Children's quaternary, regional referral base provides a unique opportunity to be exposed to complex and/or rare clinical conditions you might not otherwise see or manage.

2. Retaining medical knowledge is complex. Most intensivists would agree that the best way to learn is to see a patient with a specific diagnosis and then thoroughly review the available textbooks/literature regarding that diagnosis. Routinely following this process allows the information to 'stick' better, as opposed to rote memorization. Therefore, it is an expectation that you not only know your patient, but you must also know his/her disease process(es) utilizing the resources available here. It is expected that decisions about patient care will be guided, and supported, by the available literature. You should not be satisfied or accept 'That's just what we do or how we do it' as answers.

3. There are many excellent textbooks in pediatric critical care as well as pediatric congenital heart disease available. These books are generally kept in individual intensivist's offices and will be loaned to you on request.

4. Use the personnel resources here on the unit! Invaluable resources on the unit include nurses, respiratory therapists, nutritionists, pharmacists, advanced practice nurse practitioners, and physician assistants. All are willing to teach you so you can get the most out of your rotation here. All you have to do is ask.

5. **In September 2011**, we modified how the PICU staff will deliver lectures to the residents and medical students. In the past, our ability to give the lectures consistently was difficult and was adversely affected by PICU census/acuity and number of available residents. Now, every Wednesday afternoon, from 1300 to 1600, is blocked off and will provide uninterrupted didactic sessions.

6. Each month there will be 4 lecture 'blocks'; each block will be discussed on Wednesday afternoons center around a physiologic system/topic. Each Wednesday, there will be 4 lectures lasting approximately 45 minutes each. The first lecture will be given by cardiology. By the end of the rotation, there will be 16 covered topics.

7. **Give the resident phone to the nurse practitioner or on service attending during this time!** During this time, your clinical involvement should be zero; you are expected to give your full attention and participation to the lecturer during this time. If there are any problems with this...let me know!

PICU 'Wednesday Lectures'

Block One
Cardiology Topic
Respiratory Failure
Airway/Intubation
Mechanical Ventilation

Block Two
Cardiology Lecture
Status Asthmaticus
Shock
Cardiovascular Medications

Block Three
Cardiology Lecture
Coma
Status Epilepticus
Brain Injury

Block Four
Cardiology Lecture
Sedation And Analgesia
Fluids And Electrolytes
Diabetic Ketoacidosis

Presentations I

1. **Brief synopsis** of patient's history and major events over the past 24 hours. Identify any patient symptoms or complaints ('S' of SOAP Note)

2. **Objective (System Based Approach)** in the following order. Depending on the patient, one or more areas will be emphasized
   - **Neurologic**
   - **Cardiovascular**
   - **Respiratory**
   - **FEN/GI**
   - **Hematologic**
   - **Infectious Disease**
   - **Invasive Monitoring**
   - **Social**

3. **For all vital signs, state current, low, high, and general range**

4. **Neurologic**
   State new procedures/results/issues

   State continuous drips, any changes, and number of prn's

   State other neurological meds as well as pertinent drug levels

   If drains present, identify type, level, 24 hour and last 12 hour output.

   If monitoring cerebral saturations or ICP/CPP, treat as vital signs

   Examination (pupils, strength, tone, deficits, fontanelle, incisions, dressings, GCS for good measure, pain/anxiety)

5. **Cardiovascular**
   State new procedure/results/issues

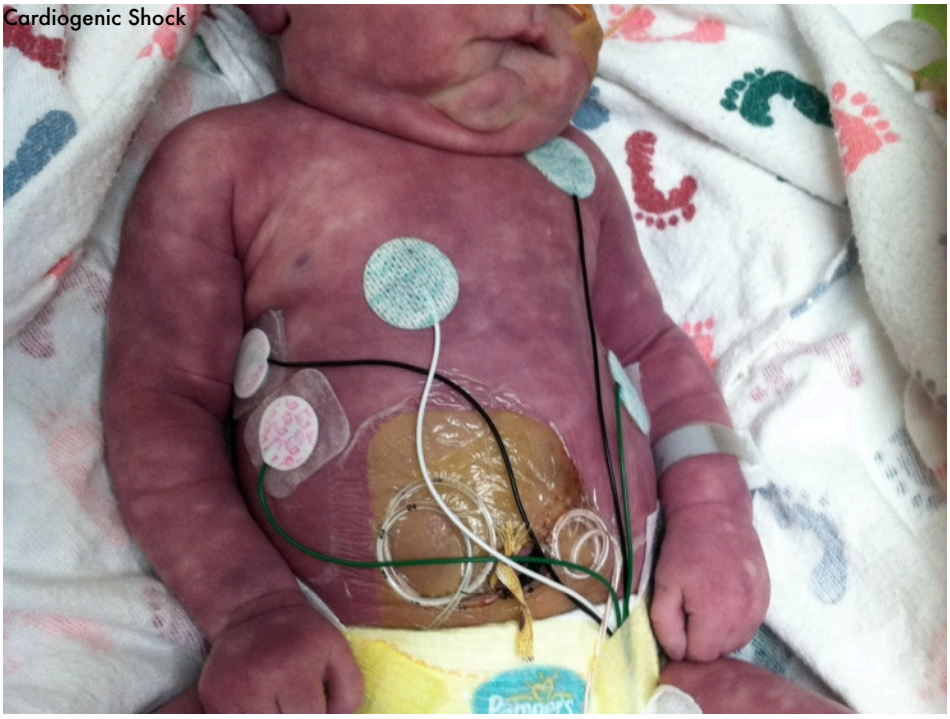
   State continuous drips, any changes, and number of prn's (e.g. for hypertension)

   State other cardiovascular meds (e.g. sildenafil, hydrocortisone)

   State all pertinent/available vital signs: HR, BP, CVP, mixed venous saturations, lactates

   State current pacer settings

   If a post-operative cardiac patient and chest tubes are in, state 24 and last 12 hour output (amount and type)


Cardiogenic Shock

Admitting A New Patient

All new patients admitted to the PICU, regardless of primary service, must be seen as soon as possible by a resident. A thorough history and age appropriate, complete physical exam must be performed by the resident. Review of all available patient information (including diagnostic and laboratory test results) must also be reviewed. Once this has been done, the resident should present the patient to the PICU attending, formulate an assessment, and outline a plan of care. After discussion, orders should be done (including appropriate tests)and a note should be placed in EPIC.

New patients, whose admitting attending is one of the PICU attendings, will need a an H and P done by a PICU resident. The responsibility of performing this lies on the resident who initially admitted the patient. These should be a note as soon as possible. The attending of record will review, edit (where needed), and sign the document electronically.

New patients, whose admitting attending is NOT one of the PICU attendings, do NOT need an H and P done by a PICU resident. A progress note should be written by the resident in the chart. The attending will review and sign this note; he/she may also do a separate critical care note for additional documentation.

During admission, patient care ALWAYS comes first. Orders and notes may need to be delayed until the patient is stabilized. There is always paperwork that needs to be done, but your priority should be learning as much at the bedside as possible.

Admission PEARLS

If a patient is being transferred from another facility...

-Take time to review everything from the transferring facility (labs, reports, medications (and times given), cultures, hospital course, etc)).
-Make sure copies of everything are obtained prior to the transport team leaving. If items are missing, these will need to be sent or faxed as soon as possible.

If a patient is being transported from the field by EMS...

-Talk to EMS personnel and review all paperwork to establish a timeline of the exact events and interventions that occurred.

If a patient is being admitted directly from the OR or PACU...

-Review and understand exactly what was done and why.
-Review the anesthesia record. How was the patient induced? Were there any airway difficulties? What size ET tube was used?
-Note amount of fluid (crystalloid, colloid, and blood products) given as well as amount of blood loss and urine output.
-Note types and place of invasive lines.
-If the patient was on cardiopulmonary bypass, note the presence of any dysrhythmias, total bypass time, cross clamp time, and post surgical ECHO results.
-Details, details, details...are important!

Presentations II

5. **Cardiovascular Continued**

Examination (heart rate, rhythm, exact type of murmur you hear, central and peripheral pulses, capillary refill, temperature, incisions, dressings, tube insertion sites)

6. **Respiratory**

State new procedure/results/issues

State **your** CXR findings

State current respiratory medications, CPT, changes, and prn's

State all pertinent/available vital signs: RR, SpO2, ETCO2.

If chest tube placed for a non-cardiac patient, state output amount/type here.

State respiratory support:

If supplemental, state route and how much

If on ventilator, state ETT/trach type and size, mode, rate, PEEP, TV (set TV if on VC or given TV if on PC), PIP (set if on PC or measured if on VC), PEEP, FiO2, and i-time.

State most recent blood gas results and identify any significant blood gases for past 24 hours.

For blood gases, state: Type/pH/pCO2/pO2/Bicarbonate/Base Excess/Saturation

Examination (rate, pattern, state any asymmetries/abnormal sounds, work of breathing, amount/color/consistency of secretions)

7. **FEN/GI**

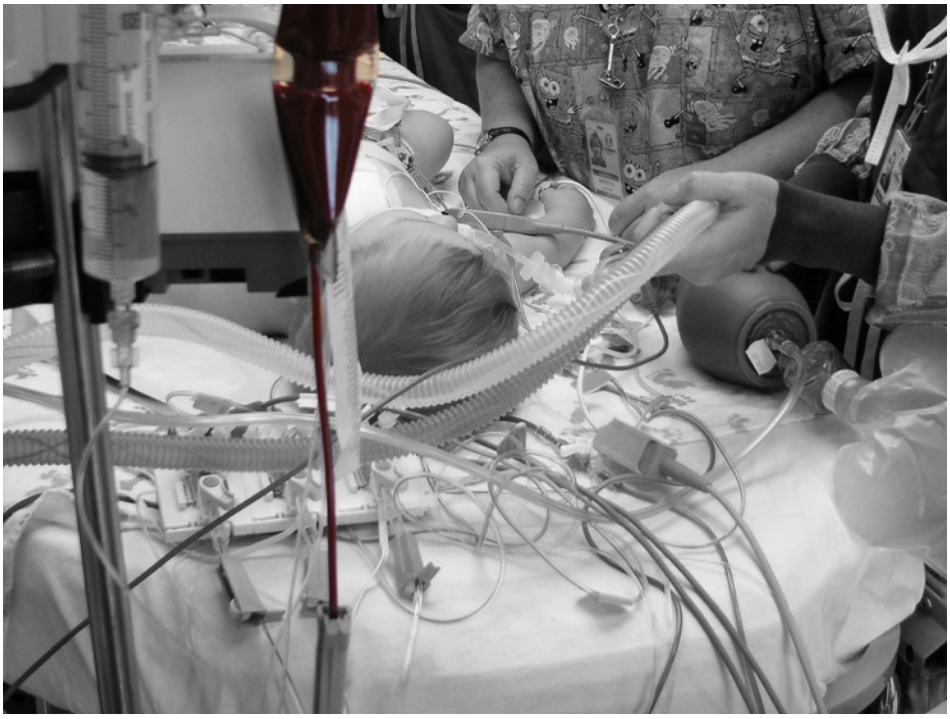
State new procedures/results/issues

State current weight, change from last weight, and dry weight.

State total I/Os for the past 24 hours as well as gastric pH's

For input:

Breakdown input into colloid, IVFs/TPN, intralipids, and enteral feeds.



Getting Ready For Rounds

Preparing for rounds can be a daunting task, especially if the unit is busy and/or the patients are critically ill. Here are a few things that may help.

- Do a thorough checkout with the post-call resident; find out exactly what happened overnight.
- Review all labs, medications, recent cultures, radiographs, studies, etc.
- Talk with the nurses! They are the ones that are constantly at the patient's bedside.
- Do a thorough, not cursory, exam of each of your patients.
- Read the nurses notes on the flowsheets.
- Think about and analyze the data you are gathering and presenting.
- **Pay very close attention to trends** (HR, CVP, BP, FiO2 requirements, PIPs, pCO2, CXRs, sedative/analgesia boluses, urine output, potassium levels/boluses, BUN, creatinine). **These are only a few!**
- Look at the most recent chest x-ray and always evaluate for line/ETT position, new infiltrates/effusions, pneumothoraces.
- Develop an organized system/checklist. A systematic approach to evaluating/presenting each patient will help you avoid 'missing something'.
- Follow all isolation precautions for each patient. None of us are exempt.
- Wash your hands before and after examining each patient.

So, You Are On Call Tonight...?

Taking care of your 3-4 patients during the day is one thing; being responsible for all the children in the PICU at night is quite another. Here are some expectations and suggestions...

- Get a thorough checkout from the other residents (and nurse practitioners). You are expected to know these patients as well as your own.
- Examine each patient after checkout. This will give you a 'baseline' if their clinical situation changes during the night.
- Make it a habit to walk around every couple of hours to check on everyone and talk with the nurses.
- Check for new labs frequently. It is not uncommon for patients to have hourly blood gases.
- **Never** minimize a nurse's concern about a patient. If they are concerned, you need to be concerned.
- **Always** consider ordering cultures if a patient is febrile. If you are not sure, ask.
- Always take tachycardia, hypotension, and desaturations **very** seriously. Dismissing these can be catastrophic.
- Minimize the amount of time on 'the phone.' Maximize the amount of time at the bedside. There is never a good excuse not to evaluate a patient directly.
- Morning x-rays and labs are performed at 0400 and 0600, respectively. Please look at them.
- An intensivist is always on with you. Do not hesitate to ask us anything!

Presentations III

5. **FEN/GI Continued**

Excluding colloid, identify ml/kg/day patient is getting (very important for cardiac patients

State kcal/kg/day for all patients (no exceptions)

If on TPN, state dextrose concentration, GIR, and grams of protein and fat/kg/day

For output:

Subdivide into appropriate categories (e.g. emesis, gastric, stool, peritoneal, hemodialysis, and **urine**)

For peritoneal dialysis, state diasylate type, concentration, dwell time/amount, and frequency

Urine output must be presented as total amount, and mL/kg/hour for past 24 and 12 hours.

State scheduled medications, drips (e.g. furosemide or insulin) with any recent changes, new meds, and one time meds (e.g. 'extra dose of furosemide).

State type/number of prn's given for electrolyte replacement.

Plan and prepare to state ALL laboratory values. State range/trends of specific electrolytes if following serially (e.g. K, Na, Glu)

Examination (characterize/quantify edema, abdominal distention, organomegaly, bowel sounds, tenderness, GU exam for skin breakdown/rash)

6. **Hematology**

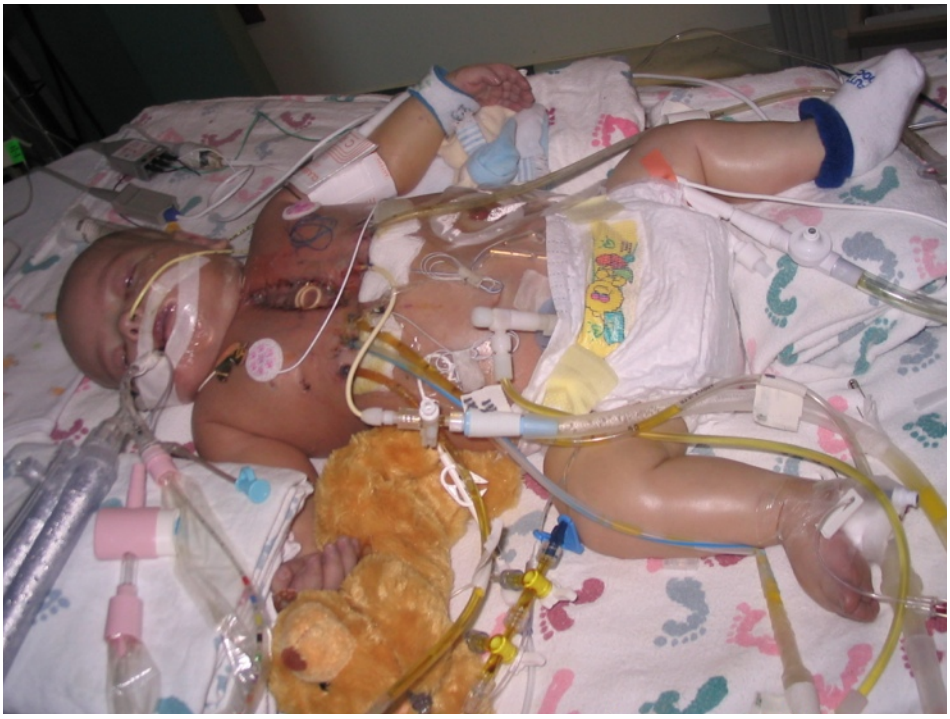
State new procedures/results/issues

(Re)State amount/type of blood products given in past 24 hours

State medications (e.g. enoxaparin, aspirin, heparin, Vit K) and any recent changes

State full CBC with differential

State coagulation studies if available



Cardiothoracic Surgery Patients

There are close to 250 children a year at Children's who undergo surgery requiring cardiopulmonary bypass. A vast majority of these patients have congenital heart disease. At any given time, about 50-75% of the patients in the PICU are recovering from congenital heart surgery. These patients, generally, have very complex cardiovascular physiology as well as cardiovascular-respiratory physiologic interactions.

Like their physiology, taking care of these patients to ensure the best possible outcome is also very complex. All patients who undergo congenital heart surgery are under the primary care of the cardiothoracic surgery attending(s)/service. The pediatric cardiology and pediatric critical care services are intimately involved with the care of these patients throughout their ICU course.

When a child is admitted to the PICU for post-operative cardiac management. A structured/scripted hand off from the surgical team to the PICU team will occur at that time. The immediate and short-time post-operative time periods demand meticulous clinical, laboratory, and vital sign monitoring. **Every** detail in these patients matters; this can not be over-emphasized.

Because pediatric critical care physicians (and you) are in the PICU 24 hours/day, we serve as the minute-to-minute physicians caring for these patients. We are always in close consultation with the cardiothoracic surgeons and cardiologists (as well as nurse-practitioners and physician assistants) who may not be immediately/physically available due to their other clinical obligations. It cannot be overemphasized that communication between all the involved services caring for these patients is paramount. Even subtle physiologic/laboratory changes may be clinically significant.

It is expected that you will know, in detail, the anatomy, operative course, and cardiovascular physiology of each of the patients you are following. You must review all preoperative and intraoperative information (i.e. anesthesia flowsheet, pre and post-ECHO results, postoperative surgical note, bypass time, cross clamp time, etc). In addition to the written documentation, there is no substitution for direct communication between caregivers (anesthesiologist, cardiovascular surgeon, cardiologist).

With regards to cardiac anatomy/physiology, there are multiple resources/references available (i.e. virtual library, anatomy books/references). A comprehensive cardiac diagram library is currently in progress. The attending physicians (from any service) are also willing to answer any questions that you can not find answers to.

In the immediate post-operative period, serial examinations are mandatory. Sometimes, the patients condition dictates every 15 minute examination, if not continuously. Likewise, continuous laboratory and vital sign surveillance is crucial. Initially, most post-operative cardiac patients will have hourly blood gases. Vital sign parameters must be clearly established, known, and understood.

Presentations IV

6. **Hematology (Continued)**
   State pertinent labs (and trends) if actively anti-coagulating patient

7. **Infectious Disease**
   State new procedures/results/issues

   State Tmax, Tcurrent, and Tlow (if applicable)–know how it is taken

   State current antibiotics and any changes. Know if they are for treatment, prophylaxis, or empiric

   State pertinent drug levels, CRP, ESR if applicable

   State most current culture/lab (including gram stains) results/status.

8. **Invasive Monitoring**
   Includes PICCs, central venous lines, arterial lines, Foley catheters, transthoracic lines (e.g. RA/LA lines)

   State location and number of days since insertion.

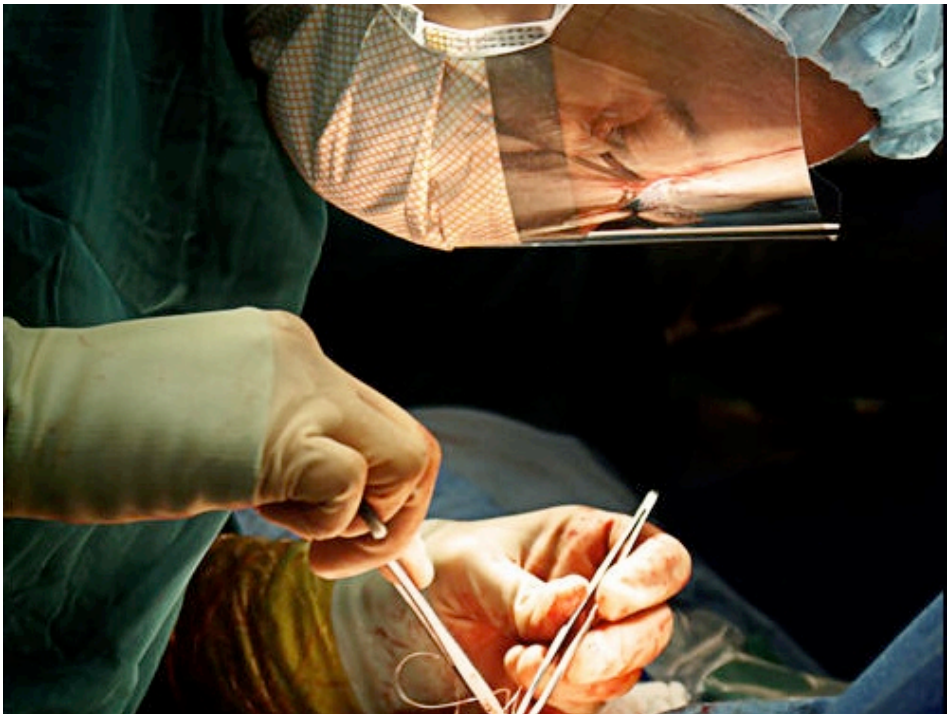
   Examination (rashes, abnormal drainage, skin incisions, sputum color/amount/consistency)

9. **Miscellaneous Systems**
   Depending on the patient, other systems may be included in your presentation/note.

   These may include:
   - Integumentary
   - Endocrine
   - Genetic
   - Metabolic
   - Musculoskeletal
   - Oncology
     - Incorporate into hematology
   - Immunology
     - Incorporate into infectious disease

10. **Social**
    State any new or significant family/social issues.

    State your recent interactions with the family and your perception of their understanding.



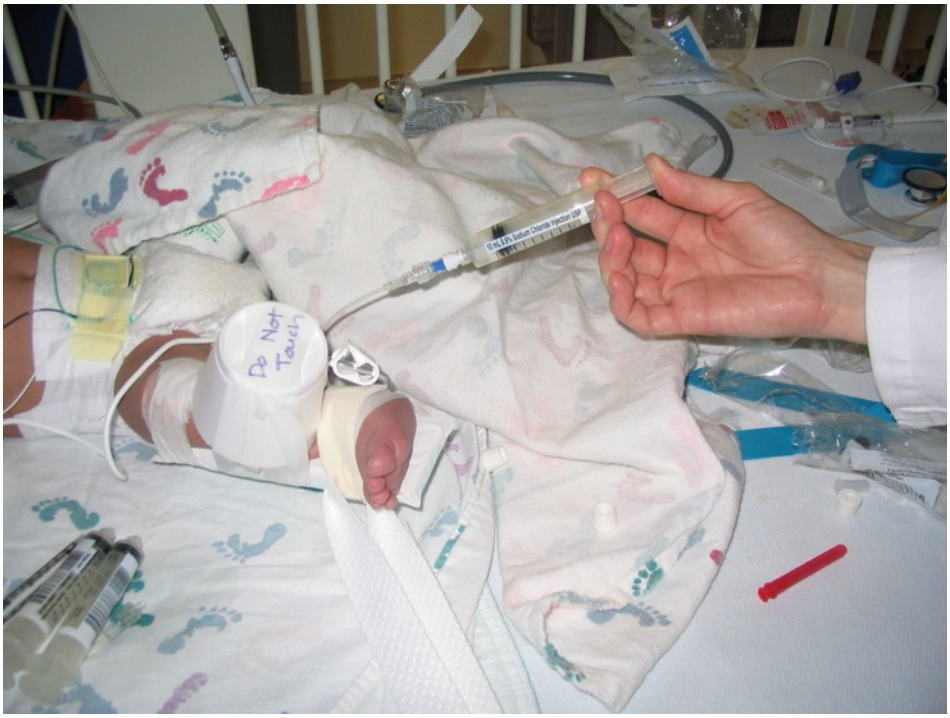
Cardiothoracic Surgery Patients Continued

Orders are generally written by the cardiothoracic surgery team. It is imperative that these be thoroughly reviewed for two reasons. First, and most obvious, you will know what is being ordered on the patient. Secondly, an additional set of eyes reviewing orders may note inaccuracies or inadvertent deletions. This statement is not accusatory, it is just good medicine.

As a general rule (particularly in newly admitted postoperative patients), all clinical decisions/orders must by discussed/approved by either the on-service intensivist or cardiothoracic surgeon. Because of the critical nature of the immediate post-operative period, even small, seemingly insignificant orders/changes, can have profound clinical effects. Your primary role as a resident involved in the care of these patients is several fold: learn as much as you can, understand the physiology/surgery, perform serial examinations, and know, minute to minute, what is going on with patient. The management per se, will be done by the cardiovascular surgeons, cardiologists, and intensivists. As changes are made in patient care, you should understand why things are, or are not, being done. If you do not understand...ASK!

Cardiothoracic Pearls

- Learn as much as you can about the anatomy, surgery, and physiology.
- Make sure your colleagues understand the aforementioned during checkout.
- Perform a thorough cardiovascular examination every day.
- Pay very close attention to the presence, absence of, or change in murmurs.
- Trends, trends, trends!
- Know pacer settings (and if actively being used.
- Know most recent ECHO results and how those compare to previous studies.
- Review/know all details of a patient's operative course.
- Understand why a certain patient has a certain murmur.
- Know when the **lack** of a murmur is concerning.
- **Never** dismiss rising lactate levels; there is always a reason.
- Understand why high pulse oximetry saturations in single ventricle physiology can be dangerous.
- **Always** confirm/notify an attending regarding increasing FiO2 on a patient with single ventricle physiology (or ductal dependent heart lesion).
- Over-communication is **always** better than under-communication between all involved clinical services.
- If you do not know or understand something...look it up, read, or ask.



Neurosurgical Patients

Many neurosurgical patients are admitted post-operatively to the PICU for 24-48 hour clinical observation/management. These procedures include, but are not limited to, cranial remodeling for various synostosis, tumor resection/biopsy, ventricular shunt replacement/revision, hematoma evacuation, and spinal fusions (usually performed by orthopedic surgeons). Most of these patients will be extubated and have orders written prior to their arrival in the PICU.

Our (your) job in the PICU is to closely monitor the neurological, cardiovascular, and respiratory status of these patients post-operatively. Any change/concerns regarding the neurological examination must be relayed to the neurosurgical service immediately. Generally, labs are not checked as frequently as cardiovascular patients. Priorities for management include monitoring for pain control, **any** new/worsening neurological deficits, electrolyte imbalances, blood counts (if a drain is present or the surgery had significant blood loss), hypo/hypertension, and respiratory insufficiency. After admitting a post-operative neurosurgical patient, you should review the patient with an intensivist who will guide you on the specific plan of care for that particular patient/surgery.

General Surgical Patients

Generally, all patients who are admitted to the PICU under the general surgical service are followed by the critical care service (and you). Most patients will be primarily managed by the general surgical service with the PICU team providing consultant services. Accordingly, most decisions regarding the care of a general surgical patient should be discussed with the primary team. Notable exceptions are when a patient is on the ventilator and continuous infusions of analgesics/sedatives. These will be primarily taken care of by the PICU service. As with all care, good and timely communication between services is essential to identify service roles/ expectations. This will ensure the best patient care and minimize confusion regarding plans of care.

Patients who are in the PICU may need general surgical consultation and/or operations. In these cases, the primary care will still be provided by the critical care service. Decisions related to the surgical procedure(s) (e.g. starting feeds, wound care) will, almost exclusively, be left to the general surgical service. Again, excellent communication cannot be overemphasized. Any questions or concerns should be directly communicated between both services in a timely manner.

Rounding

Dos

Pay attention to **every** patient...you will be responsible for the care of each patient during your call nights.

Be professional. Many students, parents, ancillary staff are involved with rounds. You serve as a role model.

Be organized and succinct. There is a lot of information to present in a limited amount of time.

Always have one person entering orders. Switch off; one person should never be doing all the orders.

Present **your** assessment and plans, not what you think we want to do. If we don't agree, we will let you know why!

Keep non-clinical/personal conversations to a minimum. Rounds will just take longer.

Don'ts

Drink, eat, text, use cellphones during rounds.

Come in and out of rounds frequently (unless absolutely necessary).

Fabricate information. If you don't know, say you don't know.

Interrupt others, no matter what their 'position/title'. This should be common etiquette.

Be shy. We encourage you to ask questions and become involved.

Assume orders discussed on rounds are entered. Always follow up and make sure.

Pass out from standing too long. Yes, this has actually happened! This looks bad in front of parents and is embarrassing to everyone else!

Don't Forget To...

fill out the medicine reconciliation form for every newly admitted patient.

calculate kcal/kg/day and fluid (mL/kg/day) for every patient, every day.

triple or quadruple check the potassium concentration in TPN (**especially** if diuretic therapy is being tapered).

discuss with an attending before increasing or decreasing **any** TPN rate.

decrease IV fluids/TPN as enteral feeds are increased.

gastric pH's are performed every 6 hours on patients who are NPO.

know if a patient is due (or behind on) his/her immunizations.

follow weight, length, and OFC for patients who have been in the PICU for longer than 2 weeks.

triple or quadruple check heparin flush concentrations before ordering them. **Always** confirm with the bedside nurse.

plug in the COW (computer on wheels) when it is not in use.

monitor your ACGME duty hours...this is everyone's responsibility. If your 28 hours are soon approaching, let us know so we can get you out of here!

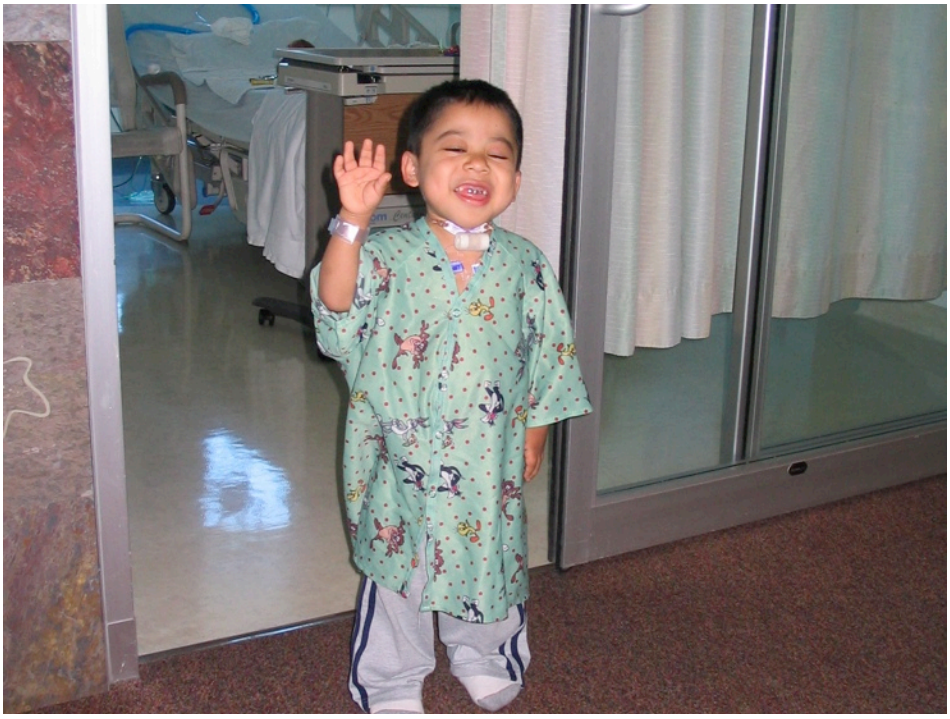
consider ulcer/DVT prophylaxis for all patients.

transition patients to oral medications as soon as reasonably appropriate.

keep verbal and telephone orders to an absolute minimum.

to use Quick Rounds and Order Sets in SCM. This speeds things up!

change iStat gases over to ABGs or VBGs when the frequency is q 6, 8, 12, or 24 hours (more cost effective).



General Medical Patients

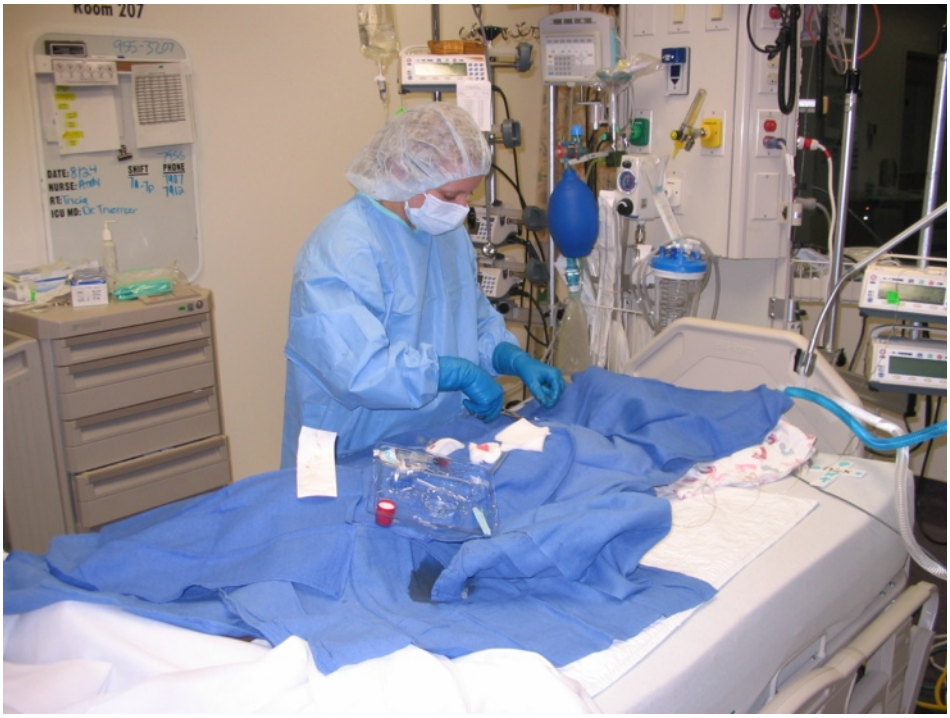
Coming Into The PICU

Unlike the PICU surgical patients, the care of patients who are 'medical' patients will be almost exclusively managed by the PICU team. These include patients from the hospitalists, heme/onc, renal, pulmonary, cardiology, endocrinology, neurology, and GI services. When a patient is admitted to the PICU, under the initial primary care of the aforementioned services, the transferring service will continue to provide advice/recommendations regarding the area(s) of their expertise. Examples include: pediatric nephrology managing hemo or peritoneal dialysis, heme/onc managing chemotherapeutic agents, and cardiology managing anti-arrhythmic medications. Again, initial and daily communication is a top priority to clarify clinical roles/expectations amongst all involved services taking care of a given patient. If there is any doubt on 'who is managing what'....communicate!

Leaving The PICU

Patients who are admitted to the PICU under the primary care of the intensivists will need to be transferred to a different service when they leave the unit. If a patient has a primary care physician, he/she should be notified regarding the patient and asked if he/she wants to assume primary care of the patient on the floor. A significant proportion of these patients will be transferred to the hospitalist service. The hospitalist service is an excellent primary service for any child, but may be particularly beneficial for the child who has multiple medical issues and/or multiple consultant services involved. In these children, the hospitalist service may be preferred due to their expertise in coordinating and delivering the complex medical care that many of these children require. However, patients who have been previously seen by a particular subspecialty or have illnesses localized to a certain organ system may best be taken care of by that particular subspecialty/service.

Whether a patient is being admitted to or transferred from the PICU, direct verbal communication regarding the patient's clinical course, assessment, and plans must be done at every level. This includes nurse to nurse, resident to resident, and attending to attending. This is an expectation in order to provide optimal, efficient, and comprehensive medical care of every patient who is admitted to, or leaving, the PICU.



Procedures

During your rotation, there will, generally, be many necessary procedures performed. It is our goal for you to be able to perform/assist with as many of these procedures as possible. Because it is impossible to predict the time of such procedures, the procedure distribution amongst the residents may be inequitable (similar to some residents having 'good' calls and others having 'bad' calls). The dogma of 'see one, do one, teach one' applies...to some degree. Most residents enjoy having the opportunity to perform a procedure, but you will never be forced to perform a procedure you feel uncomfortable with.

All residents will be expected to attempt/perform the following the procedures: lumbar puncture, peripheral IVs, intraosseous needle placement, and bag-mask ventilation. Although these are not the most 'glamourous' procedures, proficiency/expertise of these procedures is necessary for any future pediatrician. The ability to place a peripheral IV (or IO) and bag mask ventilate a patient are perhaps the most important skills you can acquire during residency. The ability to correctly perform these procedures may seem mundane, but they are truly life saving interventions. Every opportunity should be taken by you to perform these procedures whenever the opportunity arises.

Other procedures are more invasive, require greater skill, and generally carry an increased patient risk. The procedures include, but are not limited to: central lines, arterial lines, endotracheal tube intubation, chest tube placement. The decision for you to have the opportunity to assist/perform with one of these procedures is complex and depends on a variety of things such as anticipated difficulty, urgency of procedure, resident experience, attending comfort level, clinical condition of the patient, and census/acuity of the rest of the unit. If you are not allowed to do a procedure, there is generally a good reason for this decision. Please do not take this personally! This is a difficult decision to make at times. If you have any questions/concerns, please ask.

Most procedures require informed written consent to be obtained. Some procedures will be covered by the general 'Consent For Treatment' form obtained at time of admission. Other procedures, due to their emergent or life-threatening nature, will not need consent prior to their performance. Informed consent is a medical-legal obligation and is not optional. In the case that a procedure is recommended and sought, but the parents are physically unavailable, telephone consent must be obtained. This requires two people's signatures on the consent form; one person who explains the procedure and another who witnesses the conversation.

Frequently, the PICU nurses will obtain consent for a procedure. However, you are encouraged to obtain consent so you have the opportunity to learn how to explain the risks, benefits, and alternatives to a proposed procedure. This also enhances parent-caregiver interaction. Finally, an attending will be supervising you and a 'time out' will be performed for each procedure.

Always...

give a thorough checkout, even if you are just going to clinic for the afternoon.

try to draw a peripheral blood culture when drawing central line blood cultures.

wash your hands before and after examining each patient.

obey posted isolation precautions. This is not optional.

check out with the NPs if you are not going to be fielding phone calls for a brief period (e.g. noon conference). Don't forward your phone with out letting them know.

arrive early and allow extra time in the morning...a lot can happen overnight!

familiarize yourself and examine each patient when you start evening call. This will give you a 'baseline' when performing examinations later.

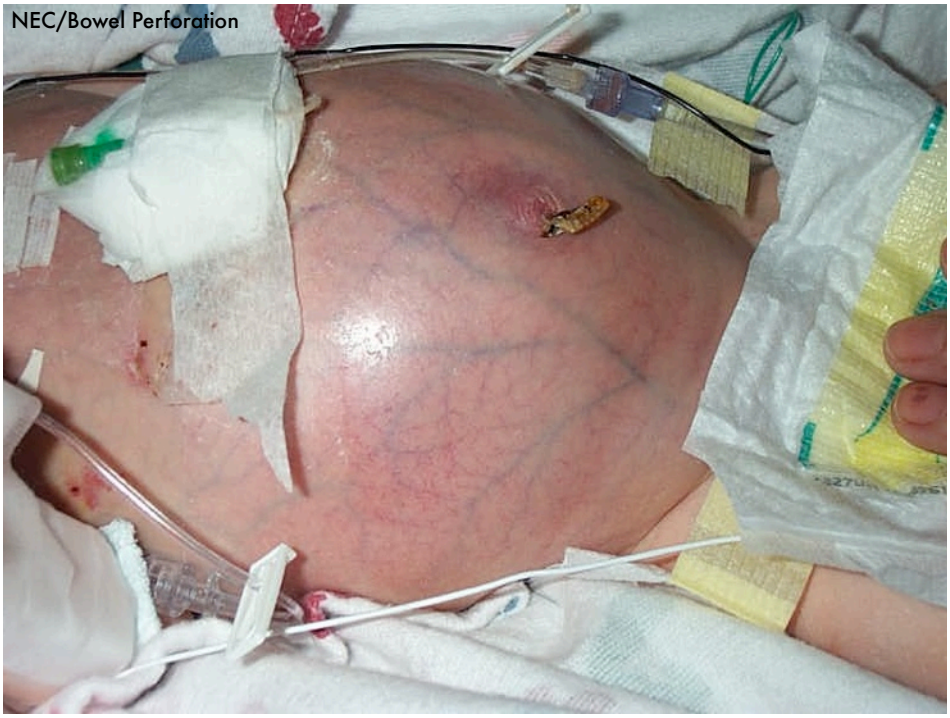
check all morning labs when you are on call (around 0630).

review all morning chest x-rays when you are on call (around 0500).

clean up after yourself! This includes the conference room, after procedures, putting mobile tables/ COWs away, etc. We are not your parents!

make patient confidentiality a high priority.

fill out the lecture evaluations for each and every lecture given to you.


NEC/Bowel Perforation

ACGME Duty Hours

In July 2003, the ACGME mandated limits on the number of hours a resident can work weekly, and continuously; these were, again, modified in July 2011. These hours are undoubtedly well known to you and no further elaboration is needed here. As a resident you are required to report duty hour violations to the pediatric residency program. As a teaching PICU, we are also required to uphold these mandates. It is our goal to be 100% compliant with the ACGME duty hour restrictions, both the 80 hour/week rule and the 28 hour rule. The responsibility for meeting this goal falls jointly on the PICU staff AND the residents. Rounds should be done efficiently enough to allow the residents ample time to finish their work. Residents are expected to have seen and gathered all information before rounds commence.

Children's PICU is busy and often it is VERY busy. Managing your time and prioritizing your work can be difficult, but it is an essential skill you would need after residency. Try to get as much done BEFORE rounds every morning! **There is a possibility that you will not have time to complete your notes before your 28 hours 'are up', so to speak. If that is the case, leave the note another resident or the attending and any other 'to dos' to your fellow residents; you MUST leave!** The work WILL get done. The attending will not MAKE you stay

Please do not abuse your fellow residents or the NPs/PAs. There is a difference between a resident, who was up all night working his/her tail off, being unable to complete his/her work and a resident, who slept during a 'quiet' night, and leaves incomplete work for his/her colleagues the next morning. The latter behavior is not acceptable, will be noticed, and will be reflected on the end-of-the-month evaluation.

So....put forth a genuine effort, make use of any 'downtime', be considerate of your fellow residents, and let the attending know if you are at risk of violating the duty hours. Time management can be difficult. The intensivists are available 24/7; if you need help how to manage your time/obligations/priorities, we are always here to help and assist.

Generally, the '80 hour rule' is at less risk of being violated than the 28 hour rule. Nonetheless, we cannot keep track of every resident's weekly hours. This is your responsibility. Keep track of your hours! If you are in danger of going over 80 hours, please bring this to the attending's attention well BEFORE the 80th hour. At that time, a solution can be discussed to ensure compliance with the ACGME policy. If a violation does occur, you must report it to the pediatric residency program. As a courtesy, please inform Dr. Kadlec or Dr. Mysore immediately if an infraction occurs and the circumstances surrounding it so it can be investigated in a timely manner.

EPIC Patient Summary

Starting October 2013, the old Excel document for keeping track of patient info is no longer. Instead, a running summary AND daily 'to-do's' are in EPIC. **It is your responsibility to keep each patient's PICU summary and to-do list updated on a daily basis.**

Cross Coverage

Cross coverage has become increasingly common with the implementation of the ACGME duty hour restrictions. Learning how to pass on AND accept patient information/ responsibility is a skill you must learn well in residency. As with any transfer of information, errors can, and will, occur. For the best care of our patients, cross coverage information MUST err on the side of being overly detailed, particularly in the PICU.

For the aforementioned reasons, the on-service resident must be able to communicate every detail regarding the care of his/her patients. The cross-covering resident should not regard incomplete information as acceptable. Enough information should be passed so that the cross covering resident knows each patient's current diagnosis/problems, recent medical/ surgical interventions, current medications and ventilator settings, daily goals, possible issues overnight, and plans in case those issues arise.

The importance of detailed, and accurate, checkouts cannot be overemphasized.

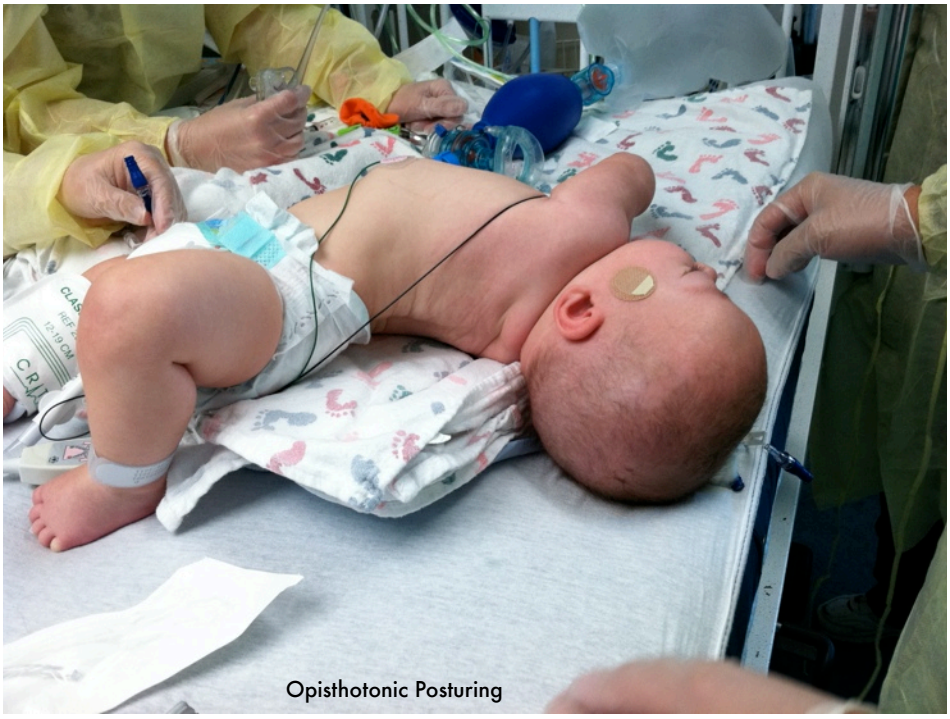
EPIC Notes

Inaccurate copy-forwarded notes will absolutely not be accepted. If you use this feature, the information must reflective today's information (not yesterday's or the day before that).

Don't be lazy with EPIC. YOU still must interpret all vital signs and data. YOU must analyze trends. YOU must assess if your patient is getting better or worse. YOU must outline a specific plan.

Avoid generalities in your exam (e.g. NAD, RRR, CTA, etc). These are rarely applicable in the PICU.

Be specific in your plans. Phrases such as 'continue to monitor', 'wean as tolerated' are essentially worthless.



Opisthotonic Posturing

Evaluations

All residents rotating through the PICU will be evaluated at the end of the month. This will be accomplished through the New Innovations system, as with other rotations. Your 'final' evaluation will be an 'averaged' evaluation from the on-service attendings that particular month (typically 3 to 4). At the end of each month, Dr. Kadlec gives hard copies to each on-service attending that worked with the residents. After completion, the numbered scores are averaged and all comments are included in the final evaluation. The final evaluation that appears in New Innovations will state the evaluator is Dr. Kadlec, but keep in mind that is not always the case. Dr. Kadlec's name appears on all the evaluations as he is the one who coordinates the evaluation process. If you have any questions regarding your end-of-rotation evaluation, please do not hesitate to contact Dr. Kadlec directly.

Medical students, typically 4th years, who spend one month in the PICU will be evaluated in a similar fashion. Medical students who only rotate through the PICU for one week will have their evaluation completed only by the on-service attending.

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If you...

order an EEG, notify the on service/ call neurologist AND EEG tech.

order a stat ECHO, discuss with the on service/call cardiologist.

order a line culture, always order a peripheral blood culture.

are on call, pay even closer to morning rounds!

feel a colleague's checkout to you is inadequate, demand further information/details.

order vancomycin or aminogyclosides, always order levels.

feel you (or anyone else) have been discriminated against, in any way, you should notify human resources.

order medications for an older child/ teen, never exceed the maximum adult dose.

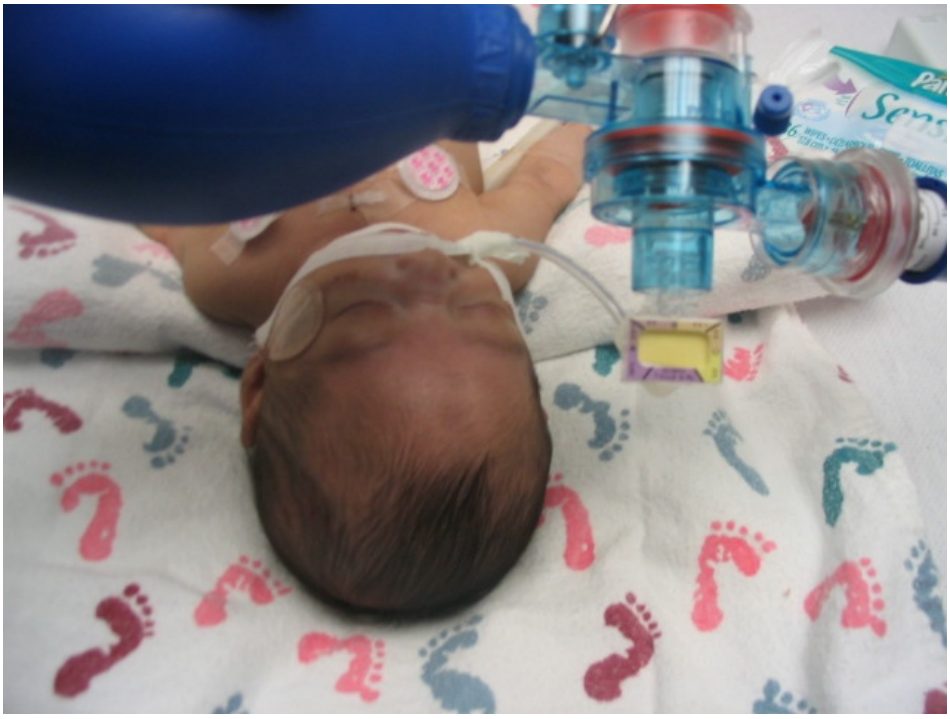
have someone on a continuous paralytic infusion, always consider a 'holiday'.

are in jeopardy of the 28 hour or 80 hour time limits, let us know!

perform **or** assist in a procedure, make sure you document it in your procedure log.

have suspicion for child abuse/neglect, it is your (and our) ethical and legal duty to report this.

you feel treatment, or non-treatment, is unethical, please talk with your attending. A hospital ethics consult can be requested by **any** staff member.



Adverse Outcomes

We all work in Children's PICU for one reason: we want to help critically ill children get better. Fortunately, a vast majority of the children in the PICU do get better and will go home. Some children may develop short or long term sequelae from their disease process and may need to be transitioned to an intermediate care facility until they are ready to go home. There are many, many good outcomes in the PICU, but there are also children who have 'not so good' outcomes. Because of the critical nature of the illnesses seen in the PICU, there are, unfortunately, some children who may develop profound co-morbidities. Examples include tracheostomies, chronic lung disease, and neurological deficits to name a few.

Sometimes, despite our best efforts, a child will die. The death of a child is an 'unnatural' event in that it 'is just not supposed to happen.' The death of a child affects **everyone** involved in his or her care. There are very few things, if any, that cause more emotional anguish than losing a child. We have expertly trained social workers, chaplains, nurses, and physicians who are available 24/7 to assist families going through this process. If you are having difficulty coping with the death of a patient, these professionals can also serve as resources for you.

Non-Accidental Trauma

Occasionally, children are admitted to the PICU for non-accidental trauma (e.g. child abuse). Because we are human, it is often difficult not to become emotionally involved with these children/families. These feelings are real and can range from sadness to anger to withdrawal. It is important for you to recognize these feelings, discuss them at an appropriate time/place, and maintain professional composure while taking care of these patients. In cases of non-accidental trauma, our primary job is the **medical care of the patient.** The legal aspects of a suspected non-accidental trauma will be taken care of by the appropriate authorities. There are numerous specialists available, as outlined above, if you experiencing difficulties in coping with or participating in the care of a child suspected of non-accidental trauma. Please let us know.

Finally...

We hope that your rotation in the PICU is a professionally, and personally, rewarding experience. There is a lot of hard work to be done and this is not an easy rotation. Take the time and effort during your rotation to learn as much as you can. We know that most residents taking this rotation will not go into critical care. Nonetheless, the knowledge and skills you will acquire may potentially help you save a child's life wherever you choose to practice. This is, perhaps, one of the greatest feelings in the world. Enjoy your rotation and please do not hesitate to bring up any questions or concerns you may have.