Nemours
Alfred I duPont Hospital for Children

PICU Resident Rotation

Review -Academic Year 2003-2004

Suggestions -Academic Year 2004-2005

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PICU Resident Rotation Educational Activities at Nemours Alfred I. duPont Hospital for Children

**Background**

**Nemours Foundation**

“Nemours has defined itself as an organization seeking to be excellent in the patient care experience. In our model, education and research are important because we believe that the best practitioners thrive and contribute their best in an environment of not only intellectual rigor, vitality and inquisitiveness, but also ethics, patient focus and personal commitment.

Research and education are not ends in themselves; they are means to increase the probability of excellent patient care. Nemours provides resources to fund education and research because our belief is that the best outcomes derive from the best people who are constantly challenged and encouraged to seek improvement and change – on behalf of the patient”

W.Jeff Wadsworth, Nemours President and CEO, Nemours Vision June, 2003

**Nemours Drive to Excellence**

Become one of the top 10 pediatric research centers in the United States
Become a national resource for pediatric subspecialty education
Provide the national standard for pediatric patient and family education

Nemours Vision, June 2003

**Nemours Center for Medical Leadership**

Help physician leaders sharpen the diverse skills required to achieve patient-centered care.

Robert Doughty MD,PhD, Dean of Center for Medical Leadership

**Nemours Education Innovation Program**

Established in 2001, it encourages creative proposals that might eventually be adopted system-wide to improve the quality of educational activities or processes.

Pamela Arn MD, Director Nemours Education Committee

**Nemours Net Learning**

Introduced in March 2004, it is a mechanism of on-line tracking of employee and potentially student training
Medical education and training organizations are encouraged to develop outcomes based education system that better prepares clinicians to meet both the needs of patients and the requirements of a changing health system. Education and training programs are encouraged to adopt a set of five core competencies: Provide Patient Centered Care, Work in Interdisciplinary Teams, Employ Evidence-based practices, Apply Quality Improvement, Utilize Informatics.

Committee on the Health Profession Education Summit
“Health Professions Education: A Bridge to Quality”

Leap Frog Group for Patient Safety
http://www.leapfroggroup.org/

Based on overwhelming scientific evidence, The Leapfrog Group decided to focus on three practices that have tremendous potential to save lives by reducing preventable mistakes in hospitals.

Computer Physician Order Entry (CPOE)
Prescriptions in hospitals should be computerized. With computerized prescription systems, doctors enter orders into a computer rather than writing them down on paper, and the prescription can be automatically checked against the patient’s current information for potential mistakes or problems. For example, before the doctor can complete the prescription order, the computer would check to see if the new prescription would interact badly with another drug the patient is taking, or if the patient has a known allergy to it. This type of system also reduces mistakes that occur from misreading a doctor's handwriting. Studies show a computerized prescription system can reduce serious medication mistakes by up to 86 percent.

Evidence-based Hospital Referral (EHR)
It is important to select hospitals with proven outcomes or extensive experience with specific high-risk conditions or procedures that have a high risk of death or complications. The best way to determine which hospitals are the best at performing certain high-risk treatments or procedures is by knowing the actual results their patients experience. A few states have systems set up in which hospitals report this information publicly, but most do not. The best alternative is to track how many of a certain type of high-risk treatment or procedure a hospital performs each year. Over 100 scientific studies have demonstrated a relationship between a hospital's annual number of certain high-risk treatments and procedures and patient outcomes. Patients who go to hospitals that frequently perform these high-risk treatments or procedures, or to hospitals that have demonstrated a good record for patient outcomes, have the best chance of surviving and successfully recovering.

ICU Physician Staffing (IPS)
"Intensivists," physicians specially trained to care for critically ill patients in Intensive Care Units (ICUs), should staff ICUs. More than four million patients are admitted to ICUs each year in the U.S. and more than 500,000 of these patients die. Studies reveal that at least one in ten patients who die every year in ICUs would have an increased chance to live if intensivists were present in the ICU and managing their care for at least eight hours per day. While not every hospital's intensive care unit can assure 8 hours per day of intensivist care, because there is a shortage of intensivists in the United States, this staffing level is an important factor to consider when choosing a hospital if your doctor expects that you are likely to stay in an ICU during your hospitalization.
Residency programs must require its residents to obtain competencies in the 6 areas below to the level expected of a new practitioner. Toward this end, programs must define the specific knowledge, skills, and attitudes required and provide educational experiences as needed in order for their residents to demonstrate:

a. **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health
b. **Medical Knowledge** about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care
c. **Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care
d. **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals
e. **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population
f. **Systems-Based Practice**, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

The residency program must demonstrate that it has an effective plan for assessing resident performance throughout the program and for utilizing assessment results to improve resident performance. This plan should include:

a. use of dependable measures to assess residents' competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice
b. mechanisms for providing regular and timely performance feedback to residents
c. a process involving use of assessment results to achieve progressive improvements in residents' competence and performance

Programs that do not have a set of measures in place must develop a plan for improving their evaluations and must demonstrate progress in implementing the plan.

The residency program should use resident performance and outcome assessment results in their evaluation of the educational effectiveness of the residency program.

The residency program should have in place a process for using resident and performance assessment results together with other program evaluation results to improve the residency program.

**ACGME, Outcome Project**

http://www.acgme.org/outcome/comp/compMin.asp
The Accreditation Council for Graduate Medical Education (ACGME)

Work Group on Resident Duty Hours (June 2002)

The goal is to simultaneously foster high-quality education and patient care and resident well-being. The only way residency programs and their sponsoring institutions can achieve a true “education” program as well as provide high quality clinical care, is by attending to the issue of resident duty hours and by placing a higher value on resident education and safe patient care than on meeting service demands.

Duty Hours are defined as all clinical and academic activities related to the residency program, i.e. patient care (inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

Duty Hours

- 80 hours per week, averaged over 4 weeks, inclusive of all in-house call activities
- One day off out of seven, averaged over 4 weeks, One day is defined as one continuous 24-hour period free from all clinical, educational and administrative activities.
- No in-house call more than once every three nights averaged over 4 weeks. In-house call is defined as those duty hours beyond the normal work day when residents are required to be immediately available in the assigned institution.
- Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics and maintain continuity of medical and surgical care as defined in Specialty and Subspecialty Program Requirements. No new patients may be accepted after the 24 hours of continuous duty.
- 10 hours off between duty periods and after in-house call.
- Probation or accreditation withdrawal for facilities that do not comply

Institutional Oversight

- Monitoring of program’s policies governing resident duty hours by the sponsoring institution.
- Requiring sound educational justification of any increases above the 80 hour limit
- An annual report to the sponsoring institution’s governing body on duty hour compliance
- Institutional policies on patient care activities external to the educational program (moonlighting), prospective approval of these activities, and monitoring their effect on performance in the educational program
- Counting time spent in patient care activities external to the educational program that occur in the primary programs institution toward the weekly duty hour limit
- Requiring programs and their sponsoring institutions to have policies and procedures to monitor and support the physical and emotional well-being of residents
- Requiring sponsoring institutions to monitor the demands home call places on residents in all programs, and making adjustments as necessary to address excessive demands and fatigue
- Patient care support services for IV, phlebotomy, and transport activities to reduce resident time spent on these routine activities

High Quality Education and Safe and Effective Patient Care

- Priority of clinical and didactic education in the allotment of residents’ time and energies
- Schedules of teaching staff structured to provide ready supervision and faculty support/consultation to residents on duty
• Duty hour assignments that recognize that faculty and residents collectively have responsibility for patient safety and welfare
• Monitor residents for the effects of sleep and fatigue by Program director and faculty with appropriate action when it is determined that fatigue might affect safe patient care or learning.
• Education of faculty and residents in recognizing the signs of fatigue and in applying preventive and operational countermeasures
• Appropriate backup support when patient care responsibilities are difficult and prolonged, and if unexpected needs create resident fatigue sufficient to jeopardize patient care.
Alfred I duPont Hospital for Children (AIDHC) Graduate Medical Education Office

Under the direction of Steven Selbst MD, the Graduate Medical Education Programs of AIDHC have as their core purpose, the education of compassionate, highly skilled, knowledgeable physicians who are committed to excellence and the achievement of Board Certification by the relevant American Board of Medical Specialty.

Responsibilities of the Alfred I duPont Hospital for Children Graduate Medical Education Office:

Develop Alfred I. DuPont Hospital for Children of the Nemours Foundation Institutional Policies and Procedures for Graduate Medical Education Programs that include: Faculty interaction with residents (Term “resident” encompasses all GME program participants regardless of level); dispute resolution procedures; resident selection; resident evaluation and promotion; resident performance deficiency; leave of absence; duty hours; moonlighting; physician impairment; residency closure or reduction.

Standardize process for applicants applying to our training programs, a Subspecialty Resident (Fellowship) Agreement. As well as a policy for educational visitors.

Monitor educational programs, assure a positive educational experience.

Develop a tool (standardized 360 degree evaluation) to monitor that residents meet competencies.

Maintain GME data base.

Thomas Jefferson University Pediatric Residency Program

The goal of the Pediatric Residency Program of Thomas Jefferson University is to train compassionate, clinically superior pediatricians who are prepared for private practice or further subspecialization. The program exposes residents to a wide variety of pediatric pathology and patient-care environments while serving urban, suburban, and rural populations in the Delaware Valley. Throughout the three-year training period, residents are progressively given more responsibility, not only in patient care but in the teaching and supervision of students, junior residents, and other health care professionals. Resident research is strongly encouraged. Involvement in community advocacy projects is also fostered. More than half of the graduates routinely pursue primary care opportunities. Many go on to further subspecialty fellowship training.

The main teaching site is the Alfred I. duPont Hospital for Children, an entity of Nemours, which offers a wide range of subspecialties and the latest advances in pediatric care. All residents are certified in PALS and NALS in the first year of training. During their PL2 year, they spend 1.5 blocks (6 weeks) in the Pediatric Intensive Care Unit.

Steven Selbst MD, Director, Thomas Jefferson University Pediatric Residency Program
Kathleen Bradford MD, Associate Director, Thomas Jefferson University Pediatric Residency Program

SCCM Pediatric Critical Care Resident Education Committee

Provides a forum for pediatric critical care physicians who are involved in the education of residents in the PICU environment.
Alfred I. duPont Hospital for Children Pediatric Intensive Care Unit

22 beds

Snapshot of PICU Environment (7/1/03 - 2/22/04):

<table>
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<th>Reason for Admission</th>
<th>Number</th>
<th>Average LOS</th>
<th>Died</th>
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<tr>
<td>Cardiovascular/Shock</td>
<td>58</td>
<td>2.48</td>
<td>0.6%</td>
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<tr>
<td>Metabolic Derangement</td>
<td>101</td>
<td>2.70</td>
<td>0.0%</td>
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<tr>
<td>Respiratory Distress/Failure</td>
<td>491</td>
<td>4.92</td>
<td>0.6%</td>
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<tr>
<td>Neurologic Compromise</td>
<td>107</td>
<td>3.17</td>
<td>0.1%</td>
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<tr>
<td>Hemorrhage/Coagulopathy</td>
<td>12</td>
<td>1.85</td>
<td>0.0%</td>
</tr>
<tr>
<td>Procedure</td>
<td>5</td>
<td>1.69</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>75</td>
<td>1.81</td>
<td>0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>849</td>
<td>3.93</td>
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Pediatric Multisystem Trauma and Pediatric Cardiac Surgery patients are cared for in separate units.

PICU multidisciplinary team

Chairman, Pediatric Anesthesiology & Critical Care Medicine
Pediatric board certified critical care medicine physicians (4.38 FTE)
Pediatric board certified critical care and anesthesiology trained physicians (0.8 FTE)
Pediatric critical care nurse practitioner
PICU nurse manager
PICU transport nurse manager
PICU nurse educators
PICU charge nurses
PICU nurses
PICU transport nurses
PICU respiratory therapists
PICU transport respiratory therapists
PICU clinical pharmacists
PICU nutrition specialists
PICU social service personnel
PICU clerical staff
PICU volunteers
Critical care physician secretarial support
Pediatric critical care fellow
Pediatric emergency medicine and adult trauma surgery fellows
Pediatric, medicine/pediatric, emergency medicine, emergency medicine/internal medicine residents
Nursing students, externs
Fourth year medical students

NACHRI
Data base
Clinical studies

Nemours UGI Desktop
PICU bedside computer access to literature search engines, Jeffline medical library resources, evidence based clinical practice educational material and the PICU Resident Rotation web site

Nemours Education Innovation Grants

Clinical Trials
Pediatric Critical Care Physicians

FTE
Pediatric Critical Care Medicine 4.38
Pediatric Anesthesiology & Critical Care Medicine 0.8

Pediatric Critical Care FTE Physician Clinical Responsibilities
Primary PICU
- Daytime Clinical care for up to 22 patients
- Daytime Coordinate and supervise Pediatric Transports
- Daytime Coordinate patient care rounds
- Daytime Family interactions
- Daytime Critical Care Medicine Fellow clinical & procedure supervision and training
- Daytime Resident clinical & procedure supervision and training
- Daytime Medical student clinical & procedure supervision and training
- Daytime weekends, additionally consultant coverage for pediatric, multi-system trauma patients at Shock Trauma Unit (SSTU), Christiana Care Hospital
- Nighttime Back Up clinical care support for PICU and consultant coverage for pediatric, multi-system trauma patients at Shock Trauma Unit (SSTU), Christiana Care Hospital

Secondary PICU
- Daytime consult coverage for pediatric, multi-system trauma patients at Shock Trauma Unit (SSTU), Christiana Care Hospital
- Daytime assist in PICU clinical care, procedures
- Daytime critical care consult service for Alfred I duPont Hospital for Children
- Daytime sedation assistance for Alfred I duPont Hospital for Children
- Daytime PICC or temporary central line placement service for Alfred I duPont Hospital for Children
- Daytime family meetings / discharge planning for long-term patients
- Daytime Mock Codes and Interactive Teaching Sessions for PICU residents
- Nighttime Clinical care for up to 22 patients
- Nighttime Coordinate and supervise Pediatric Transports
- Nighttime Family interactions
- Nighttime Critical Care Medicine Fellow clinical & procedure supervision and training
- Nighttime Resident clinical & procedure supervision and training
- Nighttime Medical student clinical & procedure supervision and training
- Nighttime consult coverage for pediatric, multi-system trauma patients at Shock Trauma Unit (SSTU), Christiana Care Hospital

Pediatric Critical Care FTE Physician Non-clinical Responsibilities
- Administrative
- Research
- Education
  - Pediatric Critical Care Fellow Core Curriculum
  - PICU Journal Club
  - PALS
  - PICU Nurse Education
  - PICU Transport Education
  - Regional, National Conference
- Keep up with pediatric critical care advances in care
- Clinical – Availability to assist in PICU or SSTU
Average Scheduled, Monthly Hours for a Pediatric Critical Care FTE to Meet Pediatric Critical Care In-Hospital Responsibilities

<table>
<thead>
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<td>Primary PICU</td>
<td>175</td>
<td>161</td>
<td>159</td>
<td>140</td>
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<tr>
<td>Secondary PICU</td>
<td>158</td>
<td>155</td>
<td>166</td>
<td>142</td>
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<tr>
<td>Non-clinical</td>
<td>73</td>
<td>74</td>
<td>97</td>
<td>96</td>
</tr>
<tr>
<td>Total</td>
<td>406</td>
<td>390</td>
<td>422</td>
<td>378</td>
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Education Criteria that Pediatric Critical Care Physicians Are Encouraged to Fulfill If They Are Engaged in the Specialty Practice of Critical Care Medicine

Crit Care Med 2004; 32 (1): 267

- Develop an ever increasing measurable quantity of knowledge
- Regularly perform and teach an increasingly broader set of skills
- Continue to demonstrate advanced, ethical decision making
- Serve as role model for a compassionate and caring attitude toward patients who are critically ill.
- Serve as role model for the intensivist-directed multiple-professional team model of patient-centered care for all ICU patients.
- Perform the following:

Clinical

- Continue to augment his or her knowledge by assimilating appropriate new peer-reviewed published medical literature through self-directed learning.
- Develop and participate in CME activities designed to enhance critical care knowledge.
- Teach others to identify the need for and provide care for all critically ill adult and/or pediatric patients.
- Continue to provide and teach cardiopulmonary and cerebral resuscitation including advanced techniques for all patients sustaining life-threatening events.
- Introduce and teach others new methods and use of devices for management of patients in respiratory failure.
- Develop and evaluate curriculum changes for ICU caregivers, fellows, and residents.
- Diagnose and treat a sufficient number of patients with critical illness using conventional and state-of-the-art approaches to maintain clinical proficiencies.
- Teach others to select, place and use appropriate monitors for titrating therapy in any critically ill patient by demonstrating these skills in daily practice.
- Teach others infection control and monitor infection control practices of the unit.
- Teach medication safety and cost-effectiveness of therapeutic decision making.
- Increase the skills of ICU nurses and ancillary personnel in caring for critically ill patients by acting as the ICU team leader and providing in-service education.
- Model effective communication with patients, families, and members of the health care team about treatment decisions and patient prognosis.
• Support patients, their families and other members of the healthcare team through the trauma of critical illness.
• Develop collaborative and productive relationships with other specialist physicians and model joint clinical planning in managing complex ICU problems.
• Identify ethical issues and lead discussions involving patients, families, and members of the healthcare team in making treatment decisions.

Research

• Advance the clinical practice of CCM using evidence-based medicine techniques and through dissemination of findings by publishing case reports and clinical and basic science research.
• Develop and continue ongoing basic science and clinical studies designed to evaluate and improve care of the critically ill.

Administrative

• Evaluate, modify and approve ICU hospital policies.
• Improve resource utilization and maintain patient care quality by planning for future needs for institutional and regional critical care resources.
• Develop programs and change unit, institution, and regional practice to improve care of critically ill patients.
• Develop programs and document improvement in patient safety monitoring and error production.
• Use existing tool sets to assess patient and family satisfaction and direct the development of new tools when appropriate.
• Develop high-quality relationships with other healthcare providers.
• Teach the business of medicine.
• To achieve these continuing competencies:
• Commit to professional development and lifelong learning by achieving board certification and re-certification in CCM; regular attendance at CME activities and individual self-studies; produce publications related to education or research studies; attestations from colleagues, peers, patients, nurses, allied health professionals, and hospital administrators that include quality reports, patient lists and outcome statistics.

Specific credentials, cognitive and procedural skills are outlined in the appendix of the published guidelines. Crit Care Med 2004; 32 (1): 267
Pediatric Critical Care Physicians Present Contributions to PICU Education

- Participate in two Nemours Educational Innovation Grants relating to the education of PICU residents in pediatric mechanical ventilation and to the promotion of evidence-based clinical practice in the PICU.

- Participate with the Centre for Health Evidence, University of Alberta, to bring internet search engines and evidence based educational material to care givers at the bedside through the Nemours Users Guide Interactive (UGI) Desktop. http://www.cche.net/nemours

- Contribute to the biannual Alfred I duPont Hospital for Children Graduate Medical Education Office Educational Report for NCC Wilmington and Nemours Cardiac Center which is presented to the Nemours Board.

- Participate in two projects developed by the Society of Critical Care Medicine Pediatric Critical Care Resident Education Committee: Power Point Presentations for Residents in the PICU; National on-line test for residents completing a PICU rotation.

- Maintain a PICU Resident Rotation Data Base which is used to yearly review and update our educational activities with residents.

- Maintain a PICU Rotation Web Site with technical assistance from Nemours.org http://www.nemours.org/internet?url=no/aidhc/picu/index.html Username: picu / Password: resident

- Published in peer-review journals on the practicalities and cost of maintaining a PICU resident rotation Crit Care Med 1997;25(11):1898-1903 Pediatrics 2003;112(1):40-48

- Received the Alfred I.duPont Division Teaching Award by the 2002-2003 Pediatric House Staff for excellence and commitment to resident education

- Instituted a pediatric critical care medicine fellowship program

- Participate in NACHRI data bases and clinical studies

- Started the development of clinical studies to develop protocols and monitoring tools for PICU patient sedation & analgesia, resuscitation team development, genetic background of children with septic shock.

Financial Resources for PICU Education

Nemours Foundation
General support. No specific RVU equivalent for educational activity.

Centers for Medicare & Medicaid Services, Health Resources and Services Administration Children’s Hospital Graduate Medical Education Payment Program
Direct Medical Education (DME) portion of the Health Resources and Services Administration Graduate Medical Education (GME) Payment Program to our free-standing Children’s Hospital historically has not covered teaching physicians’ compensation. Pediatric 2003;112(1):40-48
Multidisciplinary PICU Educators Involved in Resident Education

Clinical pharmacist (John Giamalis)
Nursing staff development (Nancy Blackburn)
Respiratory therapy clinical instructors (Debbie Marckese, Dawn Slehorst)
Reference Librarian (Nancy Loescher)

Financial Resources
Voluntary

Secretarial Support for PICU Resident Educational Experience
Ilene Sivikoff

Coordinate application paperwork for visiting residents and medical students with GME Office, various residency programs, Jeffline and Stentor

Prepare individual resident and medical student introduction folders

Assist with PICU Resident Education Data Base

Prepare and mail a yearly survey to previous PICU rotation residents who are now in their first year of practice or fellowship.

Correspondence

Financial Resources
Department of Anesthesiology & Critical Care Budget

Information Systems Support

Cathy Paulish and her Information Team provide ongoing coordinated support between the Nemours Foundation and the Centre for Health Evidence in order to provide internet connections for Nemours UGI Desktop resource

Cerner Support

Terri Steinberg provides assistance to make computer order entry more user friendly and provides assistance in developing a communication tool to disseminate daily, patient information to all PICU, multidisciplinary-team members on a timely basis.
Alfred I. duPont Hospital for Children Pediatric Critical Care Resident Rotation

(Username: picu    Password: resident)

Nemours’ Pediatric Critical Care physicians provide a PICU rotation for:

- Thomas Jefferson University Pediatric 2nd-year residents
- Thomas Jefferson University Emergency Medicine 2nd-year residents
- Christiana Care Health System Emergency Medicine 2nd-year residents
- Christiana Care Health System 2nd- and 3rd-year Medicine-Pediatric and Internal Medicine-Emergency Medicine residents
- Alfred I duPont Hospital for Children Emergency Medicine 1st-year fellows
- Christiana Care Surgical Trauma Critical Care Fellows
- 4th year medical students from various programs.
- Pediatric resident elective in Transport Medicine / Airway and Intubation Skills (Combined program with Nemours Anesthesiologist)
- Pediatric Critical Care Fellow (start date July 2003)

We aim to introduce individual residents to the art of pediatric critical care in an environment where we need to balance:

- Residents' expectations for a productive educational experience
- Resident's PICU service obligations
- Resident's commitment to outside-of-PICU program expectations and restricted duty hours
- Pediatric GME and SCCM viewpoints on time committed to resident ICU exposure
- Critical care attendings' clinical, administrative, research, and other educational responsibilities
- Consistent bedside care of the critically ill child
- Health care economics.

Since 1992, our PICU goals, curriculum, and future plans reflect ongoing development based on recommendations and observations from:

- SCCM Guidelines for Resident Physician Training in Critical Care Medicine
  Crit Care Med 1995; 23:1920-1923
- American Medical Association, Graduate Medical Education Guidelines for Intensive Care Experience (NICU and PICU)
  Graduate Medical Education Directory, American Medical Association, 1996-1997, p 184
- General Guidelines for Resident Training in Critical Care Medicine
  New Horizons 1998;6:255-259
- The Future of Pediatric Education II
- SCCM Pediatric ICU Resident Education Committee
- Continuous Quality Improvement via nursing and resident questionnaires as well as survey of practicing physicians who participated in our PICU rotation as residents
- Interactions with the Thomas Jefferson University Pediatric Residency Program
In October 2000, the PICU rotation goals were updated to meet Thomas Jefferson University Pediatric Residency Program needs:

**Goals**

1: **Understand how to resuscitate and stabilize the critically ill child in the PICU setting.**

**Objectives:**
- Explain and perform steps in resuscitation and stabilization, particularly airway management and resuscitative pharmacology.
- Describe the common causes of acute deterioration in the previously stable PICU patient.
- Function appropriately in codes and resuscitations as part of the PICU team.

2: **Understand how to evaluate and manage infants, children, and adolescents with certain diagnoses (reasonably expected of general pediatricians) commonly encountered in the PICU setting, as well as indications for transfer to a pediatric intensive care physician.**

**Objectives:**
- Learn the pathophysiology, differential diagnosis, assessment and management of pediatric:
  - Acute respiratory failure
  - Hemodynamic instability
  - Sepsis
  - Acute neurologic insults
  - Acute electrolyte and endocrine disorder
  - Acute renal failure
  - Coagulation disorders
  - Overdoses and poisonings
  - Trauma
  - Burns
  - Multiple Organ System Dysfunction

3: **Understand the application of physiologic monitoring and special technology treatment in the PICU setting.**

**Objectives:**
- Learn the indications and techniques of:
  - CVP monitoring
  - Intracranial monitoring
  - Invasive blood pressure monitoring
  - Analgesia
  - Parenteral nutrition
  - Oxygen administration
  - Acute ventilator management
  - BiPAP, CPAP
4: Develop case management skills for complex multi-problem patients under high stress situations, under the supervision of an intensivist, using principles of decision-making and problem solving and understanding one's own limits.

Objectives:
- Develop/maintain detailed problem lists with accurate prioritization.
- Coordinate with multiple consultants involved in the care of the patient.
- Recognize the limits of one's knowledge, skills, and tolerance for stress; ask for help as needed.

5: Understand how to provide comprehensive and supportive care to the PICU patients/families.

Objectives:
- Communicate effectively in verbal and written form with fellow residents, attendings, consultants, referring physicians, nursing staff, social workers, auxiliary health care professionals, and discharge planners.
- Recognize and evaluate the psycho-social needs of acutely ill children and their families, during both the immediate illness and recovery.
- Demonstrate respect, sensitivity, and skill in dealing with death and dying with the child, family, and other health care professionals.
- Interface appropriately with established plans of care for chronically ill children.

6: Become familiar with ethical and medical-legal considerations in the care of critically ill children.

Objectives:
- Discuss concepts of futility, withdrawal, and withholding of care.
- Define brain death and describe criteria for organ donation.
- Describe hospital policy on "Do Not Attempt Resuscitation" orders.
- Understand indications for ethics committee consultation.

7: Become familiar with pediatric critical care research

Objectives:
- Exposure to clinical research protocols, critical care resuscitation animal lab, case reports
- Exposure to Continuous Quality Improvement in the PICU

8: Incorporate Evidence-Based Clinical Practice techniques into daily PICU patient care.

Objectives:
- Ask clinically-focused questions that pertain to PICU patient care
- Search the literature for appropriate articles that address the clinically focused questions
- Evaluate the validity, results, and clinical applicability of the articles
- Present the information in the form of a Critically Appraised Topic to the PICU team
New Challenges

Updated Guidelines for critical care medicine training and continuing medical education
CritCare Med 2004; 32 (1):264

Critical care physician education is a continuum from residency through subspecialty training and into continuing practice.

Learning in critical care medicine is optimized when the learner is intimately exposed to and participates in the cognitive and technical aspects of care.

Training should include a structured process that progressively transfers increasing levels of responsibility for decision making, ensures continued training in the practical aspects of care, and provides training and experience in the administrative and management functions of the ICU.

In addition to being an environment in which excellence in patient care is the foundation for learning to care for the critically ill and injured patient, the critical care environment should be an intensivist-directed, collaborative multiple-professional team model of patient-centered care for all ICU patients. The ICU should comply with ACCM guidelines. The training program director must demonstrate a commitment to and competence in all aspects of critical care medicine.

On completion of an ACGME approved graduate education program in a clinical specialty of medicine (e.g., anesthesiology, internal medicine, pediatrics, or surgery), each resident physician will have developed a measurable quantity of knowledge, learned a set of observable skills, demonstrated adequate decision making and possess a caring and compassionate attitude for patients who are critically ill.

On completion of an ACGME approved graduate education program, each resident physician will be able to perform the following:

Clinical

- Identify when a patient requires treatment best delivered in an ICU under the direction of a qualified intensivist.
- Diagnose and stabilize patients with impending organ failure (respiratory, cardiac, neurologic, hepatic, gastrointestinal, hemorrhagic, renal, etc.).
- Identify the need for and initiate cardiopulmonary resuscitation.
- Diagnose and prevent hemodynamic instability, and/or initiate treatment for cardiogenic, traumatic, hypovolemic and distributive shock.
- Identify and initiate treatment for life-threatening electrolyte and acid-base disturbances.
- Suspect and initiate treatment for common poisonings.
- Use data from appropriate invasive and noninvasive monitoring devices to titrate therapy in an ICU.
- Understand basic infection control techniques.
- Understand basic nutrition support techniques.
- Understand basic sedation and analgesia principles.
- Understand basic concepts of therapeutic decision making and medication safety.
- Recognize, use and help integrate the unique skills of ICU nurses and ancillary personnel in caring for critically ill patients into the multiple-professional team model.
- Consider ethical issues and patients’ wishes in making treatment decisions.
Research

- Understand the basic methods for searching, reviewing and evaluating the medical and scientific literature.
- Support ongoing basic and clinical science protocols as well as process improvement protocols within the ICU.

Administrative

- Communicate effectively with families and all members of the healthcare team about ICU capabilities and patient-specific issues.
- Communicate with and support patients, their families and all members of the healthcare team through the physical and psychological complexities of critical illness.
- Seek consultation, when appropriate, with specialty physicians in managing complex ICU problems.
- Maintain good relationships with other healthcare providers.
- Support initiatives to improve care of critically ill patients.
- Understand the need for patient safety monitoring and error reduction strategies.
- Understand the need for and help in the process of assessing patients and family satisfaction.
- Understand basic compensation methodologies for critical care services.
- Understand and ensure compliance with institutional and unit policies and procedures as well as regulatory policies from accreditors, regulators and payers.

All GME programs must ensure that each resident receives supervised exposure to an adequate number of critically ill patients.

- These patients should be cared for by appropriately trained individuals in appropriately staffed and equipped ICUs.

Since not all trainees will be exposed to the entire length and breadth of clinical problems during their ICU experience, a core critical care curriculum taught by clinical experts should supplement the clinical experience.

- Case based education methodology is encouraged.

The program director should ensure that each resident achieves the competencies outlined.

A list of credential, cognitive skills and procedural skills are outlined that are meant to serve as guides for both programs and individuals participating in the educational process.


Additional objectives for subspecialty training (Critical Care Fellows) are also outlined.

Crit Care Med 2004; 32(1): 266-267
PICU Resident Rotation Educational Activities  
Nemours Alfred I. duPont Hospital for Children  
July 2003 - June 2004

Core Curriculum

Interactive bedside teaching

Residents are encouraged to ask focus clinical questions about patient problems, search for literature, evaluate the validity, results and applicability of pertinent literature and share information with the PICU team.

Day and night resident supervision by board-certified, pediatric, critical care medicine physicians

Mock Codes

Interactive Teaching Sessions using evidence-based clinical practice techniques and resident participation on focused clinical questions pertaining to ARDS, Sepsis, Closed Head Injury.

Journal Club

Daily Radiology Rounds in PICU (Monday-Friday)

Pharmacy session
  TPN Support in the PICU
  Immunosuppression for Solid Organ Transplant Patients

Respiratory Therapy Session
  Introduction to Ventilator Support in the PICU

Availability of Powerpoint Presentations for Self Study
  Airway  Respiratory Failure  Mechanical Ventilation  ARDS
  Near Drowning and Hypothermia  Asthma  Blood Gas Analysis
  Shock  Fluid and Electrolyte Emergencies  Vasoactive Drugs  DIC
  Sedation / Analgesia and Neuromuscular Blockade in PICU  Head Injury
  Status Epilepticus  DKA  Oncologic Emergencies  Poisoning
  Renal Failure  Renal Replacement Therapy  Stabilization and Transport
  Enteral and Parenteral Nutrition  Pharmacodynamics / Pharmacokinetics
  Hepatic Failure  Solid Organ Transplant Pharmacology  Ethics
  Pulmonary Artery Catheterization  Multiple Organ Dysfunction
  Post-op Cardiac Management

Mentor
Orientation To PICU Resident Rotation  
Alfred I duPont Hospital for Children  
2003-2004  

Patient Care: Resident Responsibilities  

PICU morning rounds begin at 0730 on week-days and 0800 on Sat/Sun and Holidays.  
It is expected that residents will examine their primary patients & collect necessary data before rounds.  
Residents are expected to know the clinical course of all PICU patients.  
Residents will write a daily SOAP note on their primary patients.  
Residents will put their names next to the critical care attendings’ names on the PICU room board for those primary patients that they are following.  
In the interest of patient continuity of care, before leaving for clinic, seminar or home, residents must check out in detail the updated clinical course of their primary patients with the resident who is designated on-call and the critical care attending.  
On Sat/Sun and Holidays, the on-coming resident and the resident from night call are each responsible for examining and collecting data on half the PICU patients before rounds.  
On Sat/Sun and Holidays, the on-coming resident and the resident from the night before will divide and complete the daily patient notes.  
During your first two days in the PICU, it is expected that you will review the following information about the PICU Resident Rotation (http://www.nemours.org/internet?url=no/aidhc/picu/index.html) (username:picu /password:resident) in this order:  
  Administrative Issues  
  General Information  
  Patient Responsibilities  
  Order Entry  
  Transfer Out of PICU Algorithm  
  Surgical NICU Coverage by PICU Rotation Resident  
  Code Blue  
  Difficult Airway Cart  
  Presenting Patients on PICU Rounds  
  Goals  
  Curriculum  

PICU Resident Education  
The primary PICU educational process focuses on interactive teaching during patient care rounds and ongoing bedside discussions with the critical care attending regarding on-going patient care.  
Additional educational resources include Mock Codes, Interactive Teaching Sessions, multidisciplinary session with clinical pharmacists and respiratory therapy, monthly journal club, internet access to Society of Critical Care Medicine power point presentations geared toward residents in the PICU (http://www.picucourse.org), individual pediatric critical care text for self-reading, PALS Algorithm card, mentor. A librarian is available during Friday patient care rounds.  

Interactive Teaching Rounds  
A PICU problem is addressed (ARDS, Sepsis, Closed Head Injury). A Focused Clinical Question is posed.  
Residents are asked to find an article that addresses the Focused Clinical Question using the resources in Nemours UGI Desktop and evaluate the validity, results and applicability of the article using the Users’ Guides To The Medical Literature. Residents will use this information in an interactive discussion with the critical care attending. Residents are also encouraged to ask focused clinical questions during PICU rounds, find literature that addresses the question, evaluate the literature for validity, results & applicability to their patient using evidence based clinical practice principles and bring the information back to the PICU team. To facilitate this process, residents have access to the Nemours UGI Desktop:  

Mentor  
One of the critical care physicians is assigned to a resident as a mentor. This is an informal process that provides the resident with an additional contact during the PICU rotation.
**Nemours Users Guides Interactive (UGI) Desktop**

*Username:* [Password]:

In the PICU, Nemours UGI Desktop can be accessed via desktop computers through the icon Nemours UGI Desktop or via the bedside wireless computers and WYSE terminals through the icon Vividesk.

Residents can download this internet resource on their office, home or laptop computers by going to the URL [http://www.ccche.net/nemours](http://www.ccche.net/nemours) and follow directions for downloading.

**Browser Tab**

- Double Click the Bell on the desk for a Tour describing the basic Vividesk technology and an introduction to the on-line Users’ Guides To The Medical Literature

**Activities Tab**

- Under Interactivities, double click Interactivities: Using the Desktop for additional information on using the Desktop. Complete the questionnaire.
- Guides for Searching
- Readings: Encouraged to review the first three categories – Introduction, Finding the Evidence, Therapy

**Resource Tab**

- Users’ Guides To The Medical Literature textbook.
- Search Engines: PubMed, Ovid, ACP Journal Club, Cochrane Library.
- MD Consult (includes access to Nelson’s Pediatrics, Harriet Lane).
- Journals (Connection to Journals via Jeffline).
- Article and Search Requests from Delaware Academy of Medicine Library (http://www.delamed.org) which is located in the Library icon. The FAX number for the PICU is 302-651-5460.
- Micromedex.
- PedsCCM (http://www.PedsCCM.org), Pediatric Critical Care educational resources

**Practice Tab**

- PICU (PICU Rotation, Radiology Review, picucourse.org)
- Practice Guidelines
- Tools (Calculators that address evidence based clinical principles)

**Jeffline, Thomas Jefferson University on-line Medical Library**

*Campus Key:* [Password]:

**Monitoring Activities**

During their first week, residents are asked to complete various Pre-PICU Rotation Forms located on the PICU rotation web site under Pre-PICU Rotation Forms in the section entitled Questionnaires, Test and Evaluations.

PICU Residents are encouraged to document their primary patients’ diagnoses and age, procedures performed with supervision and their hospital work-hours on forms provided.

During their last week, residents are asked to complete various questionnaires and tests under Post-PICU Rotation Forms located in the section entitled Questionnaires, Test and Evaluations

Residents participate in the Pediatric Section of the Society of Critical Care Medicine (SCCM) Pediatric Resident Education Committee post-PICU on-line test

Password:

**Passwords**

*Cerner*

Username: [Password]:

*Novell* (in order to enter Stentor Radiology site: //nfap03.nemours.org)

Username: [Password]:

Snap Shot of PICU Resident Educational Activity

Residents pre-PICU Rotation Critical Care Experiences

<table>
<thead>
<tr>
<th>Program</th>
<th>PICU</th>
<th>NICU</th>
<th>Adult CCU</th>
<th>Adult SICU</th>
<th>Adult MICU</th>
<th>Adult Trauma ICU</th>
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</thead>
<tbody>
<tr>
<td>Christiana ER</td>
<td>0</td>
<td>1</td>
<td>4</td>
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<td>4</td>
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<td>0</td>
<td>4</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TJU ER</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
</tr>
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<td>Pediatric</td>
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<td>3</td>
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</tbody>
</table>

Resident Goals for their PICU Rotation

Christiana ER


The most common peds emergencies and how to care for the critically ill peds patient. How to do some of the procedures required to take care of peds emergencies. How best to discuss critical situations with the parents of a critically ill child. Common peds meds and doses in the emergency or code situation.

Caring for critical pediatric patients.

How to handle pediatric code or pediatric unstable patients. Basic medication doses. Pediatric procedures.

Med Peds

Critical care management.

Recognizing critically ill children and learning the methods of stabilizing them.

Medical Student

How to differentiate between PICU level problems and floor problems. Better my skills at procedures. See how to mange the sickest patients.

Assessment and treatment of acute, life threatening illnesses.

Procedures including acute management of sick pediatric patients.
TJU ER

Pediatric Airway/vent management, approach to common management issues, Pediatric code situations

To become comfortable in managing critically ill pediatric patients.

Increased understanding to the management of critically ill children and a high level of comfort with invasive rescue procedures in children.

Resuscitation of children.

Pediatric

Management of acutely ill patients, improve procedural skills, critically examine literature.

Management of critical care patients.

Immediate management/stabilization of the critically ill child.

Managing critically ill patients. Learning how to run a code.

Learning to deal with emergent situation, think quickly, lead effectively, exposure to clinical situations.

I hope to become a little more comfortable with acute care situations.

Ability to better identify critically ill patient, and basic management until ICU setting is available.

How to care for a critically ill child before they can be transferred to the ICU.

Identifying a critically ill child who needs intensive care and basics of PICU management.

I would like to feel more confident in acute situations.

Learning Preferences

<table>
<thead>
<tr>
<th>Activity</th>
<th>Christiana Care ER n=2</th>
<th>Med Peds n=2</th>
<th>Med Student n=3</th>
<th>TJU ER n=4</th>
<th>Pediatric n=10</th>
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<tbody>
<tr>
<td>Daily Rounds</td>
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<td>Ask Attending</td>
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<td>2</td>
<td>1</td>
<td>3</td>
<td>7</td>
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<tr>
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<td>0</td>
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<td>Check Textbook</td>
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<td>1</td>
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<td>2</td>
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<tr>
<td>Mock Codes</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Patient Care</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Give a Talk</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Most frequent Preferences for learning were Daily Rounds, Mock Codes, Patient Care and Asking Attending. Only 4% preference for doing Medline Searches.

Primary Patients Followed By Individual Residents

Christiana ER

No data

MedPeds

No data

Medical Student (n=1)

6 month  Spinal muscular atrophy
17 year  CP / Apnea
6 month  Prematurity, BPD, osteopenia, Liver disease
36 month  Pneumonia
9 year  Neuromuscular scoliosis, Lissencephaly, unit rod
1 month  Liver failure
7 year  DKA
TJU ER (n=1)

16 year  Post-op Nissen Fundoplication
14 year  Tracheostomy
12 year  DKA
9 year    VACTERL, post op PSF
11 month Post op Anterior and Posterior Spinal Fusion
9 year    Status asthmaticus
11 month Post op spinal fusion, wound infection
36 month Post-op liver biopsy
Celexa Ingestion
Respiratory distress
Post-op spinal fusion
Encephalitis
Post-op Gtube placement
Subglottic hemanigioma
Quadraplegia, Tracheostomy, UTI
Pierre-Robin
Post op tethered cord
Tracheostomy, RSV
Post op tendon releases
Asthmatic
DKA
Seizures
Asthmatic
Post op thoracotomy

Pediatrics (n=3)

14 year  CHARGE Association, Trach, T&A, DLB,increased 02 needs
6 month  Respiratory distress, history HIE and tracheostomy
17 months ARDS-expremie, short gut, cholestasis, TPN,HTN
36 months New onset seizures
1 month  Acute liver failure;liver transplant.
13 months Neuromuscular scoliosis; spinal fusion.
10 years  Acute liver failure.
3 year    Status epilepticus.
Status epilepticus, CP
Post-op spinal fusion.
Post op shunt revision.
Hemophilia, subdural hematoma.
Respiratory distress; chronic lung disease.
Pyelonephritis, hypotension.
Status asthmaticus

6 months  Trisomy 21, BPD, Tracheostomy
6 years   ALL, ARDS, Trisomy 21
1 month   Renal failure, hyponatremia.
6 months  Post op stoma closure, bowel perforation.
15 years  Alcohol ingestion.
11 months  Biliary atresia, liver transplant.
14 months  Posterior spinal fusion, autism.
5 year    Craniectomy.
Idiopathic scoliosis, posterior spinal fusion.
DKA.
Elective tracheostomy.
Respiratory distress, pertussis.
PSF/ASF
Anemia, fever, dehydration.
RSV bronchiolitis
End stage renal disease
Bilateral cleft palate repair
Spastic quadriplegia
RSV bronchiolitis
RSV, tracheal diversion
Hypovolemic shock
Status asthmaticus
Acute life threatening event
DKA
Neuroblastoma

3 year Sepsis / Acute renal failure
9 year ARDS
2 year Pneumonia / CVA
3 year I cell disease / Respiratory failure
13 year Laminectomy
15 year Spinal fusion post-op
11 month Seizure
10 year DKA
Toxic shock syndrome
Asthma

**Number of Supervised Procedures Reported by Residents**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Christiana ER n=4</th>
<th>Med Peds n=1</th>
<th>Med Student n=1</th>
<th>TJU ER n=1</th>
<th>Pediatric n=7</th>
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<tr>
<td>Intubations</td>
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<td>0</td>
<td>10</td>
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<td>Change Trach</td>
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<td>6</td>
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<tr>
<td>Femoral Venous</td>
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<td>7</td>
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<td>Internal Jugular Venous</td>
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<td>Subclavian venous</td>
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<tr>
<td>Femoral Arterial</td>
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<tr>
<td>Radial Arterial</td>
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<tr>
<td>Thoracentesis</td>
<td>1</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Pericardiocentesis</td>
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<tr>
<td>Chest Tube</td>
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<td>Pig Tail Chest Tube</td>
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<td>Spinal Tap</td>
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<tr>
<td>Defibrillation</td>
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<tr>
<td>Run Pediatric Code</td>
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<tr>
<td>Participate in Pediatric Code</td>
<td>5</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Deliver Bad News</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>4</td>
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</table>
Number of Supervised Procedures Among 14 residents

- Intubations: 8
- Change Trach: 11
- Femoral V: 7
- Internal Jugular V: 2
- Femoral A: 11
- Radial A: 7
- Thoracentesis: 1
- Pigtail Chest Tube: 1
- Spinal Tap: 2
- Participate Pediatric Code: 1
- Deliver Bad News: 5
- Other: 1
Percent of Total PICU Rotation Days that Individual Critical Care Physicians are Responsible for Daytime Supervision and Clinical Bedside Teaching (July 2003-June 2004)

![Daytime Supervision Pie Chart]

Percent of Total PICU Rotation Nights that Individual Critical Care Physicians are Responsible for Nighttime Supervision and Clinical Bedside Teaching (July 2003-June 2004)

![Nighttime Supervision Pie Chart]
Residents’ (n=11) score for the Critical Care Physicians who participated in clinical rounds and supervision - the attending’s ability to help the resident learn critical care

Likert score: 1= Major area of deficiency; 2= Needs improvement; 3= Meets expectations; 4= Exceeds expectations

<table>
<thead>
<tr>
<th>Physician</th>
<th>Average Score</th>
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</thead>
<tbody>
<tr>
<td>Bradford</td>
<td>3.7</td>
</tr>
<tr>
<td>Costarino</td>
<td>3.1</td>
</tr>
<tr>
<td>Cullen</td>
<td>3.3</td>
</tr>
<tr>
<td>Hertzog</td>
<td>3.4</td>
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<tr>
<td>Lawless</td>
<td>3.0</td>
</tr>
<tr>
<td>McCloskey</td>
<td>3.4</td>
</tr>
<tr>
<td>Penfil</td>
<td>4.0</td>
</tr>
<tr>
<td>Stryjewski</td>
<td>3.9</td>
</tr>
</tbody>
</table>

PICU Mock Codes

1. Attendance: 4 residents, 2 RNs, 1 RN extern, 1 RT, Nancy Blackburn

scenario: 5 year old admitted from ED with septic shock, progresses to C-R arrest. Resuscitation complicated by loss of PIV and hyperkalemia

strong points: quick recognition of problem and call for help, team leader identified, use of backboard, proper treatment of hyperkalemia, suction available for intubation

remediation points: code leader not directive enough, incorrect PALS algorithms used and A-B-C not addressed in timely fashion, PIV attempted before IO, reassessments with chest compressions held not performed, no BP checked with return of spontaneous circulation, labs not obtained until late

All points reviewed in detail, encouraged to review PALS algorithms; Zoll reviewed by Nancy

2. 2 Residents
3 R.N.’s
2 R.T.’s

Child with repaired pulmonary atresia (s/p fontan) comes in severely dehydrated and clots SVC/PA anastomosis

Topics covered include
- asystole
- pulseless v-tach
- hyperkalemia
- CVL placement
- I/O placement
3. Attendance: 4 residents, 2 PICU RNs, 2 RCPs, numerous nurse externs

scenario: 4 year old with ALL, s/p BMT, history of fever and pneumonia. Underwent open lung biopsy. Had to be emergently reintubated in PACU secondary to respiratory distress. Admitted to PICU intubated, with chest tube, arterial and central venous catheters. Develops septic shock and dysrhythmias in part due to hyperkalemia. Also anemic, with right mainstem ETT

strong points: quick response to deterioration, code leader directive and calm, ongoing re-evaluation of A-B-Cs, generally appropriate PALS algorithms, appropriate response to lab values, ongoing resuscitation after return of spontaneous circulation

Remediation points: took some time for team members to assume positions and become involved, slow to respond to clues about mainstem ETT-subsequently interpreted as pneumothorax resulting in chest tube placement (discussed ways to estimate proper tube depth), slow to give fluids, slow to check lab studies

4. Attendance: 3 interns, 1 PL3 as co-facilitator

scenario: 5 yo s/p closed head injury, transfer from SSTU, in treatment room for IV placement, develops seizures, respiratory to cardiac arrest

As only interns involved, resuscitation performed only at basic levels, but good recognition of problem, attempts to manage airway and circulation

Discussed process of organizing code response, roles of different team members, activation of code system, review of management of airway/breathing/circulation with tips on how to mask ventilate, how to choose ETT size and determine correct placement, performance of chest compressions and use of back board, importance of ongoing reassessment, use of IO in code situations, expanding differential diagnosis to include neurologic processes in this scenario.

5. Present:
1 fellow
4 residents
1 medical student
3 nurses
2 respiratory therapists

scenario included:
recognition of obstructed tracheostomy
endotracheal intubation
BVM ventilation
asystole
wide complex tachycardia with and without pulse
bradycardia
transthoracic pacing
6.
Present:
2 residents
1 medical student
2 PICU nurses
1 Respiratory therpaist
Staff development nursing

6 year old child, 15 kg. (Viral myocarditis). Just arrived from ER after being evaluated for respiratory
distress. (Lasix, antibiotics).
IV fell out on way to PICU. On arrival in PICU, generalized seizure, emesis, cyanosis, poor respiratory
effort, multifocal PVCs.
Labs from ER returned with serum K 12, HC03 6, glucose 20.

Code reviewed with attention to airway, IV/IO/cenral venous access, treatemnt for pulseless VTACH,
asytrole after one of the defibrillations, evaluation and care of intubated pateint who deteriorates, treatment
for hyperkalemia.

Code leader did excellent job.

7.
4 residents
Pediatric Nurse Practitioner
2 PICU Nurses
Nursing Staff Development

5 year old 25 kg child presnted to ER with respiratory distress. Got antibiotics and diuretics.
On arrival to PICU, IV fell out, child threw up, became dusky, shallow respirations and had a generalized
seizure. Labs from the ER returned with a serum glucose of 20, K+ 9, HC03 6.

Airway controlled fairly quickly. Valium given PR. Central line placed after unsuccessful peripheral IV.
( Didn't try an IO).
Hyperkalemia addressed. Subsequent problems encountered included: pulseless VTach, asystole after one
of the defibrillations, obstructed ET tube, hypotension.

Various PALS algorthms reviewed as well as hyperkalemia treatment. Reviewed evaluation and care for
child who deteriortes with an endotracheal tube in place.

8.
Attendance: 3 PICU residents, 2 RNs, 2 RTs, Pharmacy resident and student

Scenario: 5 yo admitted from ED with septic shock (presumed meningococcus). Rapid cardiorespiratory
deterioration in PICU. Complications of emesis with intubation attempt, loss of IV access, hyperkalemia,
development of V tach.

Generally well performed, PALS algorythms followed, use of backboard, use of IO, evaluation of
laboratory studies. Team well organized and leader obvious, although period where no chest compressions
performed and some therapies slow to be initiated. Inadvertent extubation secondary to no breath sounds
on left and withdrawal of tube despite short depth of ETT. Inadvertent excessive defibrillation wattage
given secondary to lack of confirmation of verbal order.

Points discussed in detail.
9.
Attendance: 4 PICU residents, PICU APN, RT, 2 RNs

scenario: 10 month old premature infant with BPD, subglottic stenosis, status post tracheostomy. Develops airway obstruction/dislodgement. Complications of inability to effectively mask ventilate or intubate trachea, development of subcutaneous emphysema and pneumothorax, loss of IV access.

Good team organization and communication. Appropriate attempts at mask ventilation and intubation. Appropriate subspecialists called. Use of IO when PIV failed. Somewhat slow to address cardiac issues, but all done appropriately.

Team not yet knowledgable about all of the airway options in this situation. Discussed use of retention sutures, use of suction catheter as stylet to re-enter trachea, use of ETT through tracheal stoma, role of LMA, discussion of fiberoptic approach and jet ventilation. Introduced to difficult airway cart.

10.
In attendance:
4 residents
1 medical student
1 fellow
3 nurses
1 respiratory therapist

Reviewed hypovolemic shock, bradycardia, asystole, pulseless v-tach, endotracheal intubation, blood gas analysis, communication skills and roles

11.
20 nurses
Reviewed asystole, bradycardia, pulseless v-tach
intubation, I/O placement, CVL placement, defibrillation

12.
Residents 5
Nurses 2
Respiratory Therapists 1
Staff Development 2

6 year old 20 kg child.
Respiratory distress in ER. Hazy lung fields. Cultures, antibiotics,oxygen and lasix.
On arrival to PICU, IV comes out, emesis, generalized seizure, poor respiratory effort, cyanosis, multifocal PVCs.
Lab results called to PICU: Glucose 30, serum K 10, HC03 6.
Additional problems presented to group included: initial bradycardia prior to intubation; pulseless VTach; asystole with one of the defibrillations; difficulty bagging and not moving chest wall (plugged ET Tube).

Airway control addressed early. Valium PR given. Placed IO after unable to get PIV but slow to address need for central line.
Hyperkalemia treatment addressed. Bilateral chest tubes placed before checking patency of ETtube.

Discussed algorithms for hyperkalemia treatment; symptomatic bradycardia (etiologies and treatment); pulseless VTACH; asystole;
evaluation and treatment for suspected ET problems during code.
13. Attendance: 4 PICU residents, 2 PICU RNs, 2 RTs, Nancy Blackburn

scenario: 5 year old with ALL in remission, fever and neutropenia, transferred to PICU with septic shock. Develops cardiorespiratory arrest. Resuscitation complicated by difficulty with BVM ventilation, emesis with intubation, failure of broviac catheter, hyperkalemia, anemia

Good organization and following of PALS protocols. Did not explore other options for mask ventilation, no suction available for intubation. Confused EKG artifact with compressions for V tach.

Discussed extensively organization of team, role of team members and how to facilitate their function, need for reassessment with and without compressions, availability of difficult airway cart, use of IO. Encouraged to review PALS

14. 4 residents, nurse practitioner, nurse practitioner student, medical student, two fellows.

We reviewed asystole, bradycardia, SVT, torsades, endotracheal intubation, vascular access, blood gas interpretation.

15. Attendance: 4 PICU residents, APN, APN student, 2 RN, RT, RT student, Nancy Blackburn

Scenario: 7 year old with cellulitis of knee, septic shock, progresses to cardiorespiratory failure. Complicated by emesis with intubation attempt, loss of PIV, development of V tach

Major issues involved lack of organization and clearly defined code leader, leading to communication difficulties. Also deficiencies in knowledge base for PALS algorithms. Reviewed in detail organization and roles of code team members, ABC approach, reasons for low ETCO2 during CPR, IV access/drug administration options, use of Zoll.

16. Attendance: 3 PICU residents, 1 PICU medical student, RT, RT student, 4 PICU RNs

Scenario: 6 year old admitted from ED with acute wheeze after several days not feeling well-undiagnosed myocarditis. Progress to dysrhythmias/ cardiorespiratory arrest. Complications of emesis with intubation attempt, loss of PIV, pneumothorax with CVL attempt, hyperkalemia

Team well organized and appropriate interventions pursued, although somewhat slowly. Emphasized need to obtain as complete a history as possible, need to reassess ABCs routinely and after interventions, importance of organization and communication via the code leader. Discussed advantage of using IO rather than CVL in code situation. Discussed limitations of colormetric CO2 detectors during cardiac arrest. Also emphasized need to obtain lab studies early on. Recommended to review PALS algorithms.
Interactive Teaching Rounds

1.
Discussion of albumin use in critically ill ARDS patients. Critical review of two articles and discussion, blending physiology, clinical experience and evidence.

2.
3 residents
1 PICU Fellow

Topic: Septic Shock
Focused Clinical Question: Among children with septic shock does activated protein C reduce mortality and morbidity?

Introduction to septic shock with emphasis on pediatric pathophysiologic response and recent treatment guidelines.
Residents discussed the articles they found regarding activated protein C and septic shock. Articles handed out for further reading

Levy MM et al. 2001 SCCM/ESIM/ACCP/ATS/SIS International Sepsis Definitions Conference
Crit Care Med 2003;31(4):1250-1256


3.
Interactive session with the residents on the use of iNO in ARDS. Discussed indications, mechanism of action, potential adverse effects, pharmacokinetics and results of several recent clinical trials in adults and kids.

4.
2 residents
1 Pediatric Critical Care Nurse Practitioner

Septic Shock
Among children with septic shock, does activated protein C decrease morbidity and mortality?

Discussion of pediatric septic shock, Protein C pathway, studies of activated protein C in septic shock, adult and pediatric applications.
Nemours UGI Desktop used to search and locate various articles. Not much time spent of evaluating specific articles.
Articles given out to residents
Carcillo et al. Clinical practice parameters for hemodynamic support of pediatric and neonatal patients in septic shock
Crit Care 2002;30:1366-1378
5. 3 residents and 1 NP.

Question—Among children with closed head injury does mannitol control ICP better than hypertonic saline?

Residents had not had much time to prepare for topic. Therefore, discussed how to formulate a question using the PICO outline, the different types of questions that occur (therapy, harm, diagnosis, prognosis), and the different databases that may be of help. Together searched several databases looking for relevant information.

6. 1 hour didactic session with the pediatric resident on the transport elective.

7. Question: Among children with ARDS, does permissive hypercapnea reduce morbidity/mortality

No preparation by housestaff. Reviewed the background to the question, how to formulate a focused clinical question (PICO), the different domains (therapy), and the different sources available for different domains. Time spent searching different databases (Cochrane, PICU Journal Club, PubMed) and discussing the results. Encouraged to use the desktop and to prepare for next week’s question.

8. Attendance: ED fellow, 4 residents, 1 medical student, 1 NP, 1 NP student

Question: use of ECMO in ARDS

Group had not prepared for session. Reviewed with group general goal of EBM practice in PICU, different domains of questions, how to formulate a good question using PICO, the different resources available and those helpful for therapy questions. Performed search on our question using Cochrane, PICU site, PubMed, discussed findings with advantages and limitations. Encouraged to prepare for next week by performing search and evaluating selected articles.

9. Provided a lecture on transport medicine to resident on the transport elective.

Scheduled Educational Sessions

10 Journal Club

9 TPN (Pharmacist)

9 Immunosuppression for Transplant Patients (Pharmacist)

5 Ventilator Workshop for PICU Residents (Respiratory Therapy Instructors / Dr Hertzog)
Residents’ Comfort Level to Evaluate and Stabilize a Critically Ill Child

Average Scores by Program.  0 = No previous contact  10 = Highest comfort level

<table>
<thead>
<tr>
<th>Program</th>
<th>n</th>
<th>Pre-rotation Comfort Level</th>
<th>n</th>
<th>Post rotation Comfort Level</th>
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<tr>
<td>Christiana ER</td>
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<td>4</td>
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<tr>
<td>Med Peds</td>
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<td>7</td>
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<td>9</td>
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<tr>
<td>Med Student</td>
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<td>0.3</td>
<td>1</td>
<td>2</td>
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<tr>
<td>TJU ER</td>
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<td>4.8</td>
<td>1</td>
<td>8</td>
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<tr>
<td>Pediatric</td>
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<td>3.3</td>
<td>7</td>
<td>6.2</td>
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Average Percent Correct Answers on SCCM Post-PICU Rotation National Test

<table>
<thead>
<tr>
<th>Program</th>
<th>Average % Correct</th>
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<tbody>
<tr>
<td>Christiana Care Emergency Medicine (n=3)</td>
<td>82</td>
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<tr>
<td>Medicine Pediatrics(n=1)</td>
<td>74</td>
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<tr>
<td>Medical Student (n=1)</td>
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<tr>
<td>Thomas Jefferson University Emergency Medicine (n=1)</td>
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<tr>
<td>Thomas Jefferson University Pediatrics PGY2 (n=3)</td>
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### ACGME Competencies

#### Average scores by Program

Below expectations 1-3  |   Meet Expectations 4-6  |   Exceed Expectations 7-9

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<thead>
<tr>
<th></th>
<th>Christiana ER n=10</th>
<th>MedPeds n=4</th>
<th>Medical Student n=2</th>
<th>TJU ER N=4</th>
<th>Pediatrics n=15</th>
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<td>6.8 6.8 5.5 7.0 6.2</td>
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#### Critical Care Physicians’ Comfort Level that Resident’s will be able to Recognize and Stabilize a Critically Ill Child or Adolescent After completing the PICU Rotation

**Comfort Level Score:  0= No contact   10=most confident**

#### Average Comfort Level by Program

<table>
<thead>
<tr>
<th></th>
<th>Christiana ER n=10</th>
<th>MedPeds n=4</th>
<th>Medical Student n=2</th>
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<td>Overdoses &amp; Poisonings</td>
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Residents’ Self-reported hours in hospital (n=15)

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<tr>
<th>Program</th>
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<th>Hours Week 2</th>
<th>Hours Week 3</th>
<th>Hours Week 4</th>
<th>Total Hours</th>
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<td>*PGY2</td>
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<td>0</td>
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<td>51.08</td>
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<td>*PGY2</td>
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<td>44.5</td>
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<td>PGY2</td>
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<td>40.25</td>
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<td>PGY2</td>
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<tr>
<td>PGY2</td>
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<td>73.08</td>
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</table>

All ACGME duty hour rules were met except for one MedPeds resident who was 1.5 hours above the 24 hour call+6hour check out time frame twice and one medical student who did not meet the 10 hour off between duty hours because he stayed late one evening.
*(Several PGY2(Pediatrics) were only on a two week rotation.)*

### Evaluation of PICU Rotation

Average Likert score: 1= Major area of deficiency; 2= Needs improvement; 3= Meets expectations; 4= Exceeds expectations

<table>
<thead>
<tr>
<th>Program</th>
<th>n</th>
<th>Average Score</th>
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<tbody>
<tr>
<td>Christiana ER</td>
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<tr>
<td>Med Peds</td>
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<td>TJU ER</td>
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<tr>
<td>Pediatric</td>
<td>7</td>
<td>3.3</td>
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How Would Residents Improve The PICU Rotation Experience

**Christiana ER**

Add a pediatric procedures lab. Continue excellent attending teaching! Continue to have PICU residents present at morning report.

Also, if short call is necessary, it should be on the weekend for note writing; that is the most useful time to have extra people around. An extra person is generally not useful during the week.

Who would have thought that I would be more qualified to be a unit clerk after my month there than a physician caring for children?!?!? I was wholly disgusted with the computerized order entry. I would guess that an average call was spent with 75% of my time at the desk, 15% at the bedside. Good potential for learning, but the fact of the matter is that I was too exhausted to do much self-learning by the time I got home. I liked the attendings and the residents I worked with in the unit.

**MedPeds**

I would have liked to have had the opportunity to perform more procedures.

**Med Student**

Possibly have a census list of patients where we could keep track of all patients and have more info than just what we hear on rounds.

**TJU ER**

No data

**Pediatric**

Lectures on ventilators 1st day as well as brief talk with pharmacy about pressors, drugs used during intubation, sedatives and pain meds.

Have the opportunity to attend morning report and grand rounds on a regular basis.

Increase opportunities for procedures.

Increase the number of residents on the weekends.

More live didactic lectures, such as noon lectures 2-3x a week on core topics.

Less forms to fill out.

I loved it.

The ventilator workshop was great.

More opportunity to do procedures.

Scheduled didactic lectures.
Practical Considerations
for
Incorporating and Optimizing Resident Educational activities
In the
PICU at Alfred I. duPont Hospital for Children

What information outlined in recent SCCM guidelines must residents get in their one month PICU rotation that they won’t get over the three years in their training program?

- Supervised exposure to an adequate number of critically ill patients who are cared for by appropriately trained individuals in an appropriately staffed and equipped PICU.

- Identify when a patient requires treatment best delivered in an ICU under the direction of a qualified intensivist.

- Diagnose and stabilize patients with impending organ failure (respiratory, cardiac, neurologic, hepatic, gastrointestinal, hemorrhagic, renal, etc.).

- Identify the need for and initiate cardiopulmonary resuscitation.

- Diagnose and prevent hemodynamic instability, and/or initiate treatment for cardiogenic, traumatic, hypovolemic and distributive shock.

- Use data from appropriate invasive and noninvasive monitoring devices to titrate therapy in an ICU.

- Understand basic sedation and analgesia principles.

- Recognize, use and help integrate the unique skills of ICU nurses and ancillary personnel in caring for critically ill patients into the multiple-professional team model.

- Consider ethical issues and patients’ wishes in making treatment decisions.

- Communicate with and support patients, their families and all members of the healthcare team through the physical and psychological complexities of critical illness.

Can we teach all the ACGME competencies during a one-month PICU rotation?

I believe we can only concentrate on

- Patient Care
- Medical Knowledge
- Practice Based Learning and Improvement.
What outcome measurement will confirm that residents have acquired the required ACGME and SCCM competencies outlined for a PICU rotation?
Outcome measurement tools being developed by Thomas Jefferson University Pediatric Residency program, Nemours Alfred I duPont Hospital for Children GME Office, SCCM and the Pediatric Critical Care Resident Education Committee.
As measurement tools are developed, incorporate them into the PICU rotation.

Which patient care service issues can be related to resident educational goals in the PICU?
Present patients on daily rounds
Assist in the coordination of multidisciplinary and multispecialty care of the PICU patients
Assist with procedures
Progress notes?
Procedure Notes?
Computer order entry?
Although the Leap Frog Group for Patient Safety goal is to have all physician computer entry orders, the present Cerner system takes residents away from patient care. Specialized PICU staff may have to enter written orders to free up residents from the clerical work or a more friendly interface needs to be developed.

What role do residents play as part of the multidisciplinary team for patient centered quality care and safety?
Important team members who participate in the continuous surveillance of patients and patient resuscitation efforts

Do residents have time during their one-month PICU rotation to review pediatric critical care basic topics, do clinical care, produce evidence-based reviews, meet non-PICU related program responsibilities?
NO.

How can the PICU resident share up-to-date information with all members of the PICU multidisciplinary team in order to optimizes patient care and safety?
- Nurses and Respiratory Therapists can review present Resident and Attending Notes daily.
- Develop a Cerner process that will allow all PICU team members to view up-to-date Problem List and Plans as well as daily labs and orders?
  - Residents can enter Problem List and Plans after rounds and when there are changes in the care plan.
What resources are available to pediatric critical care physicians for the pediatric critical care unit educational activities?

- Educational activities
  - Keep up with the current literature in pediatric critical care medicine
  - Schedule teaching staff so that there is ready supervision and faculty support/consultation to residents on duty;
  - Work with resident duty hour assignments that recognize that faculty and residents collectively have responsibility for patient safety and welfare;
  - Monitor residents for the effects of sleep and fatigue with appropriate action when it is determined that fatigue might affect safe patient care or learning;
  - Educate faculty and residents in recognizing the signs of fatigue and in applying preventive and operational countermeasures;
  - Provide appropriate backup support to residents when patient care responsibilities are difficult and prolonged, and if unexpected needs create resident fatigue sufficient to jeopardize patient care;
  - Provide a core, critical care, case-based curriculum to supplement the residents’ clinical experience
  - Provide pediatric critical care fellow with educational curriculum
  - Provide educational activities for PICU nurses and respiratory therapists

- Resources
  - Financial
    - Nemours Foundation
      - General support. No specific RVU equivalent for educational activity.
    - Centers for Medicare & Medicaid Services, Health Resources and Services Administration Children’s Hospital Graduate Medical Education Payment Program
      - Direct Medical Education (DME) portion of the Health Resources and Services Administration Graduate Medical Education (GME) Payment Program to our free-standing Children’s Hospital historically has not covered teaching physicians’ compensation. (Pediatric 2003;112(1):40-48)
  - Time
  - FTE

What documentable outcomes are we aiming for in order to show that we are a national resource for pediatric critical care subspecialty education?

- Needs to be defined
  - Interact with Nemours Foundation Education Committee, Center for Medical Leadership, SCCM, Pediatric Critical Care Education Committee.

What resources are needed for the PICU rotation to become a national resource for pediatric critical care subspecialty education?

- Need an outcomes based budget.
- Compensation for educational activities that produce desired outcomes.
- Additional pediatric critical care physician FTEs
- Simulation Lab: Teach and test via interactive Mock Codes, Clinical scenarios, procedures
- Leadership training for critical care physicians by the Nemours Center for Medical Leadership
- Increase clinical research activity
- Coordinate our present program efforts with the Nemours Education Committee, AIDI GME office, Jefferson Pediatric Residency, Pediatric Critical Care Education Committee,
- Dedicated Data Collection Personnel and Data Base Programmers or Convert Data Base to Alfred I duPont Hospital for Children GME Office Data Bank
Suggestions for Changes to PICU Rotation Curriculum
Nemours Alfred I. duPont Hospital for Children

Have a more formal introduction session 0730-0800 on the first day of rotation.

Discontinue pre-test

Meet ACGME Patient Care, Medical Knowledge, and Practice Based Learning and Improvement competencies while following SCCM guidelines for resident pediatric critical care education under three main categories:

**Supervised resident exposure to an adequate number of critically ill patients who are cared for by appropriately trained individuals in appropriately staffed and equipped ICUs.**

A critical care, attending physician is scheduled for day and night PICU coverage of patient care and transport coordination. He or she is responsible for resident supervision.

A back-up critical care, attending physician is available during the day and night to assist with patient care if needed. She or he participates in resident supervision.

Multidisciplinary PICU nurses, respiratory therapist provide 24 hour a day bedside care for PICU patients.

Clinical pharmacists, social service personnel, nutritionists, occupational, physical and speech therapists provide daily support for PICU patients

**Resident participation in the cognitive and technical aspects of patient care.**

Present patients on daily rounds
Progress notes
Assist with procedures
Procedure Notes
Assist in the coordination of multidisciplinary and multi-specialty care of the PICU patients

Residents write orders which are reviewed by the nurse or respiratory therapist and given to PICU dedicated Cerner trained specialist who will enter orders.

During rounds, residents are encourage to ask focused clinical questions that address patient problems, search and evaluate up-to-date literature to answer theses questions, share their findings with the PICU team.

In order to be an active participant in supervised procedures, Residents will be expected to

- Know indications/ contraindications/ potential adverse effects
- Know Landmarks
- Be acquainted with Seldinger techniques
- Know What supplies are needed
- Family explanation / permission
- Supervised assistance for procedure
- Document procedure note

(Textbooks are available in PICU regarding critical care procedures)
Residents participate in afternoon patient care check out rounds (to be completed no later than 5 PM)

Before rounds, resident examines and assesses patients, check with nursing, RT, consultants for any updates. As group or individually, each resident updates critical care attending. Individual residents checks out primary patients to on-call resident.

The resident who was on call at night, will update residents in AM before they see their respective patients.

**Core Critical Care Curriculum using case based educational methodologies as much as possible to supplement the clinical experience**

Consider providing the Fundamental Critical Care Support Provider Course during each rotation (part of course each Friday?) or providing the Fundamental Critical Care Support Provider Course for all 1st year pediatric, ER and 2nd year med-peds during June.

In place of formal lectures, Case-Based, Bedside-Teaching by critical care physician during patient care rounds.

During their one week as the primary PICU attending, concentrate on the following topics when the care of particular patients presents itself.  
  - Acute Respiratory Failure,  
  - Hemodynamic Instability,  
  - Sepsis,  
  - Acute Neurologic insults,  
  - Acute electrolyte and endocrine disorders,  
  - Acute renal failure,  
  - Coagulation disorders,  
  - Overdoses & Poisonings

Critical care physician can email me with a brief description if they covered a specific issue that day. This will be entered under Interactive Sessions in the PICU resident data base.

At times, bedside teaching can only occur if the secondary critical care physician is available for acute patient issues or procedures.

Incorporate Multidisciplinary (Pharmacy / RT/ Nursing / Librarian) case-based bedside-teaching into daily patient rounds.

Consider 0730-0800 PICU Resident Educational Hour for Mock Codes, Ventilator Lab, Interactive Teaching Sessions on selected days

Continue Mock Codes / Difficult Airway Mock Code Scenarios (30-60min) weekly but change to Friday, 0730-0800

Nursing Staff Development assistance
Location PICU or Simulation Lab (when available)

Critical care physician can email me with a brief description of the Mock Code scenario. This will be entered under Mock Codes in PICU resident data base

Case-Based, Bedside Teaching by critical care physician during daytime and nighttime based ongoing patient care issues.

Concentrate on  
  - Acute Respiratory Failure,  
  - Hemodynamic Instability,  
  - Sepsis,  
  - Acute Neurologic insults,
Acute electrolyte and endocrine disorders,
Acute renal failure,
Coagulation disorders,
Overdoses & Poisonings.

Critical care physician can email me with a brief description if they discussed a specific problem that day or evening. This will be entered under Interactive Sessions in PICU resident database.

Each resident prepares and discusses with the PICU Team one Educational Prescription during their PICU rotation.

An Educational Prescription takes a PICU patient problem, asks a Focused Clinical Question, explains what search strategy was used to find pertinent literature to address the question, evaluate and describe the pertinent literature validity, results and applicability to their patient, and give a brief clinical bottom line sentence that answers the focused clinical question. The resident can let the PICU primary critical care physician know before daily, patient rounds that they are ready to present.

Resources to develop the Educational Prescription include the Nemours UGI Desktop, Users Guides to the Medical Literature, Jeffline and access to the PICU Evidence Based Clinical Practice Journal Club which already contains several evidence-based reviews of PICU patient related problems.

This process may not work. Historically, residents self report that they do not highly value medline searches as a way to learn. Clinical responsibilities and resident duty hours rarely leave time during the day for residents to prepare formal presentations. Although we provide excellent resources for searching and evaluating articles using evidence based clinical practice principles, there is a learning curve to doing this process. Historically, most residents have had some exposure to this concept but may feel that they are taking time to learn a process (evidence-based clinical practice) as opposed to learning pediatric critical care medicine.

Critical care attendings, fellows, pediatric critical care nurse practitioners can also give didactic lectures to the resident group if their schedules permit.

Their available time to participate as a group is limited (Tuesday after daily patient rounds best at present since Christiana ER residents have conference Wednesday mornings, Jefferson ER residents have conference Thursday mornings, Mock Code scheduled for Fridays and Mondays are usually hectic with residents trying to know new patients.)

A brief description of a topic discussed can be emailed to me. This will be entered under Interactive Sessions in PICU resident data base to allow credit for the person giving the lecture.

Residents will be asked to participate in ongoing educational research projects (Resident Ventilator Workshop, etc) or clinical research projects.

Develop a Patient Simulation Lab critical care physician availability to test each resident using various scenarios that address the residents’ ability to recognize and stabilize a child with

- Acute respiratory failure
- Hemodynamic instability
- Sepsis
- Acute neurologic insult
- Acute electrolyte and endocrine disorder;
- Acute renal failure
- Coagulation disorders
- Overdoses and poisonings;

During the second week of the PICU rotation, each resident will be asked how they are doing and address any concerns if they become evident.
During the last week of the rotation, residents meet as a group to review the post-test with a critical care physician.

SCCM post-test scores will be forwarded to the resident’s program director.

PICU multidisciplinary personnel will do a 360° evaluation of residents at the end of their PICU rotation.

Each resident receives a short review of their activity during the PICU rotation (critical care physician goes over the evaluations done by multidisciplinary team).
PICU Rotation Curriculum  
Nemours Alfred I. duPont Hospital for Children  
July 2004-June 2005

Introduction

1st Monday of PICU Rotation

Resident given **Overview of Expectations and Resources** for PICU rotation (Nemours UGI Desktop, Jeffline password, individual text book)

Resident given an **Orientation Sheet** that includes the following information

**Principle Clinical Responsibility**
Examine your primary patient before morning and afternoon patient care rounds and frequently throughout the day and night if the child is unstable.

Keep critical care physician updated with any changes in your primary patient’s condition.

Know the general clinical course and plan of all PICU patients.

**Principle Educational Objective**
At the end of your PICU rotation, be able to recognize and stabilize acritically ill child or adolescent who presents with
- Acute Respiratory Failure
- Hemodynamic Instability
- Sepsis
- Acute Neurologic insults
- Acute electrolyte and endocrine disorders
- Acute renal failure
- Coagulation disorders
- Overdoses & Poisonings

**Patient Care: Resident Responsibilities**
PICU morning rounds begin at 0730 on week-days and 0800 on Sat/Sun and Holidays. It is expected that residents will examine their primary patients & collect necessary data before rounds.

Residents are expected to know the clinical course of all PICU patients.

Residents will write a daily SOAP note on their primary patients.

Residents will put their names next to the critical care attendings’ names on the PICU room board for those primary patients that they are following.

In the interest of patient continuity of care, before leaving for clinic, seminar or home, residents must check out in detail the updated clinical course of their primary patients with the resident who is designated on-call and the critical care attending.

On Sat/Sun and Holidays, the on-coming resident and the resident from night call are each responsible for examining and collecting data on half the PICU patients before rounds.

On Sat/Sun and Holidays, the on-coming resident and the resident from the night before will divide and complete the daily patient notes.

During your first two days in the PICU, it is expected that you will review the following information about the PICU Resident Rotation ([http://www.nemours.org/internet?url=no/aidhc/picu/index.html](http://www.nemours.org/internet?url=no/aidhc/picu/index.html)) (username:picu /password:resident) in this order:
Administrative Issues
- General Information
- Patient Responsibilities
- Order Entry
- Transfer Out of PICU Algorithm
- Surgical NICU Coverage by PICU Rotation Resident

Code Blue
Difficulty Airway Cart
Presenting Patients on PICU Rounds
Goals
Curriculum

**PICU Resident Education**
The primary PICU educational process focuses on interactive teaching during patient care rounds and ongoing bedside discussions with the critical care attending regarding ongoing patient care.

Additional educational resources include Mock Codes, Interactive Teaching Sessions, monthly journal club, internet access to Society of Critical Care Medicine power point presentations geared toward residents in the PICU (http://www.sccm.org/specialties/pediatric/picu_course/course_index.asp), an individual pediatric critical care text for self-reading, PALS Algorithm card, access to a mentor.

Residents are encouraged to ask focused clinical questions during PICU rounds, find literature that addresses the question, evaluate the literature for validity, results & applicability to their patient using evidence based clinical practice principles and bring the information back to the PICU team. To facilitate this process, residents have access to the Nemours UGI Desktop.

A Librarian is available for assistance.

**Mentor**
One of the critical care physicians is assigned to a resident as a mentor. This is an informal process that provides the resident with an additional contact during the PICU rotation.

**Nemours Users Guides Interactive (UGI) Desktop**
*Username:* [Password:]

In the PICU, Nemours UGI Desktop can be accessed via desktop computers through the icon Nemours UGI Desktop or via the bedside wireless computers and WYSE terminals through the icon Vividesk. Residents can download this internet resource on their office, home or laptop computers by going to the URL [http://www.cche.net/nemours](http://www.cche.net/nemours) and follow directions for downloading.

**Browser Tab**
- Double Click the Bell on the desk for a Tour describing the basic Vividesk technology and an introduction to the on-line Users’ Guides To The Medical Literature

**Activities Tab**
- Under Interactivities, double click Interactivities: Using the Desktop for additional information on using the Desktop. Complete the questionnaire.
- Guides for Searching
- Readings: Encouraged to review the first three categories – Introduction, Finding the Evidence, Therapy
**Resource Tab**
- Users’ Guides To The Medical Literature textbook.
- Search Engines: PubMed, Ovid, ACP Journal Club, Cochrane Library.
- MD Consult (includes access to Nelson’s Pediatrics, Harriet Lane).
- Journals (Connection to Journals via Jeffline).
- Article and Search Requests from Delaware Academy of Medicine Library (http://www.delamed.org) which is located in the Library icon. The FAX number for the PICU is 302-651-5460.
- Micromedex.
- PedsCCM (http://www.PedsCCM.org), Pediatric Critical Care educational resources

**Practice Tab**
- PICU (PICU Rotation, Radiology Review, picucourse.org)
- Practice Guidelines
- Tools (Calculators that address evidence based clinical principles)

**Jeffline, Thomas Jefferson University on-line Medical Library**

**Campus Key**

**Password**

**Monitoring Activities**
During their first week, residents are asked to complete Pre-PICU Rotation and Evidence Based Clinical Practice questionnaires.

PICU Residents are encouraged to document their primary patients’ diagnoses and age, procedures performed with supervision and their hospital work-hours on forms provided.

During their last week, residents are asked to complete an evaluation of their PICU experience.

Residents participate in the Pediatric Section of the Society of Critical Care Medicine (SCCM) Pediatric Resident Education Committee post-PICU on-line test

Password:

**Passwords**

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<tr>
<th>Cerner</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Username</td>
<td>Password</td>
</tr>
<tr>
<td>Novell (in order to enter Stentor Radiology site: //nfap03.nemours.org)</td>
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</tbody>
</table>

**Supervised resident exposure to an adequate number of critically ill patients who are cared for by appropriately trained individuals in appropriately staffed and equipped ICUs.**

A primary and secondary pediatric critical care physician is available day and night for resident supervision.

Leap Frog Group for Patient Safety recommends that critical care physicians should be in-house 8 hours a day.

Presently in-house availability of critical care physician at night will depend on patients’ acuity and residents’ needs.

Multidisciplinary PICU nurses, respiratory therapist provide 24 hour a day bedside care for PICU patients.
Clinical pharmacists, social service personnel, nutritionists, occupational, physical and speech therapists, clerical staff and volunteers provide daily support for PICU patients

**Resident participation in the cognitive and technical aspects of patient care.**

Residents are members of the PICU multidisciplinary team involved in patient care.

Residents are designated as the primary presenters for daily patient rounds.

In the morning and throughout the day and night, residents must examine their primary patients / gather data / check consultant updates from chart / check with nursing and respiratory therapists / check Kardex, and be ready to present patients for daily patient rounds and when there are changes in the patient’s condition.

Residents need to be aware of the care plans for all patients.

Daily patient rounds provide an opportunity for all multidisciplinary PICU team members to discuss all patient care issues.

**Daily Multidisciplinary PICU Patient Care Rounds (Start 0800)**

Residents present patients on rounds as part of a multidisciplinary report on particular patient’s clinical course

Develop plan in consultation with attending, fellow, consultants, nurses, respiratory therapist

Consolidate plans into concrete orders

Written orders are reviewed with nurse or respiratory therapist and given to PICU dedicated Cerner trained specialist who will enter orders.

Complete daily progress note (acts as sign off note to on-call resident)

Ask focused clinical questions.

Search and evaluate up-to-date literature to address patient problems.

Residents perform new medical and surgical admission evaluations

Resident examines and assesses patients

Develop plan in consultation with attending, fellow, consultants, nurses, respiratory therapist

Consolidate plans into concrete orders

Written orders are reviewed with nurse or respiratory therapist and given to PICU dedicated Cerner trained specialist who will enter orders.

Complete H&P

Follow up on diagnostics and response to initial therapeutics

Residents will assist with Discharge / Transfers

Resident examines and assesses patients

Develop plan in consultation with attending, fellow, consultants, nurses, respiratory therapists

Consolidate plans into concrete orders

Written orders are reviewed with nurse or respiratory therapist and given to PICU dedicated Cerner trained specialist who will enter orders.

Follow transfer protocol

Call private pediatrician if appropriate

Notify Admitting Resident

Complete Transfer Note

Discharge summary if appropriate

Resident will assist with supervised procedures

Know indications/ contraindications/ potential adverse effects

Know Landmarks

Be acquainted with Seldinger techniques
Know what supplies are needed
Family explanation / permission
Supervised assistance for procedure
Document procedure note

Residents will assist with on-going patient care interactions.
Repeat exams on very sick patients / update critical care attending
Consolidate change in plans into concrete orders
Written orders are reviewed with nurse or respiratory therapist and given to PICU
dedicated Cerner trained specialist who will enter orders.

Residents participate in afternoon patient care check out rounds
Resident examines and assesses patients, check with nursing, RT, consultants for any updates
As group or individually, no earlier later 5 PM
Individual resident checks out primary patients to on-call resident
Individual residents update critical care attending
Residents consolidate changes in plans into concrete orders
Written orders are reviewed with nurse or respiratory therapist and given to
PICU dedicated Cerner trained specialist who will enter orders.

On-call resident responsibilities include:
New medical and surgical admission evaluations
Examine and assess patients
Develop plan in consultation with attending, fellow, consultants, nurses, respiratory
therapists
Consolidate plans into concrete orders
Consolidate change in plans into concrete orders
Written orders are reviewed with nurse or respiratory therapist and given to
PICU dedicated Cerner trained specialist who will enter orders.
Write / dictate H&P
Follow up on diagnostics and response to initial therapeutics

Discharge / Transfers
Examine and assess patients
Develop plan in consultation with attending, fellow, consultants, nurses, respiratory
therapists
Consolidate plans into concrete orders
Written orders are reviewed with nurse or respiratory therapist and given to
PICU dedicated Cerner trained specialist who will enter orders.
Follow transfer protocol
Call private pediatrician if appropriate
Contact admitting Resident
Transfer Note
Discharge summary if appropriate

Procedures
Know indications/ contraindications/ potential adverse effects
Know Landmarks
Know Seldinger techniques
Know What supplies need
Family explanation
Supervised assistance for procedure / Document procedure note

On-going patient care interactions.
Repeat exams on very sick patients / update critical care attending
Document changes in progress notes.
Consolidate changes in plans into concrete orders
Written orders are reviewed with nurse or respiratory therapist and given to
PICU dedicated Cerner trained specialist who will enter orders.

Update residents in AM before they see their patients. Resident who was on night-call must leave
the PICU by 1300.

**Core Critical Care Curriculum using case based educational methodologies as much as possible to
supplement the clinical experience**

Case-Based, Bedside-Teaching by critical care physician during patient care rounds and during daytime
and nighttime on-going patient care.

It is anticipated that about an hour will be spent with case-based teaching at the bedside during
patient morning rounds, during day supervision and during the night supervision (3 hours/day)
When the care of particular patients presents itself, the primary PICU attending may
provide clinical information about:
- Acute Respiratory Failure,
- Hemodynamic Instability,
- Sepsis,
- Acute Neurologic insults,
- Acute electrolyte and endocrine disorders,
- Acute renal failure,
- Coagulation disorders,
- Overdoses & Poisonings

The critical care physician can email DR Cullen with a short
description of any educational encounter during these times. This will
be entered in the Interactive Teaching section of our data base.

Mock Codes / Difficult Airway Mock Code Scenarios weekly (Friday 1100)
Nursing Staff Development assistance
Location PICU (Simulation Lab when available)
Critical care physician can email me with a brief description of the Mock Code scenario.
This will be entered under Mock Codes in PICU resident data base

Mechanical Ventilator Teaching Lab (First Tuesday of Rotation, 1100)

Radiology Rounds daily at 1030 in PICU with radiologist

Journal Club monthly 1200 on 4th Wednesday of rotation block, (attendings /fellows prepare)
Critical care physician can email me with a brief description of Journal Club topic. This will
be entered under Interactive Sessions in PICU resident data base

During most weekday, morning patient rounds, John Giamalis, clinical pharmacist, and Joel Brown,
respiratory therapy clinical specialist, will be available for pharmacy or respiratory therapy questions as
they arise.

Daily, residents review the SCCM PICU Resident Education Committee Power Point Slides on basic PICU
topics that are outlined on the Core Curriculum handout.

Residents are encouraged to ask focus clinical questions about patient PICU related problems. They are
given resources to help them search the literature, determine the validity, results and applicability of the
evidence found. Residents will share their findings with the PICU team on rounds.
If this process is written down as a Critically Appraised Topic, it will be forwarded to the
resident’s respective Program Director to show that the resident is involved in Practice-Based
Learning and Improvement.
Dr Cullen will attend some rounds and try to demonstrate the process of developing a critically appraised topic related to a PICU patient problem. Residents will be shown how to access the PICU Evidence Based Journal Club resource which has already addressed many PICU related problems.

Resident self-directed reading program on PICU topics that coincide with individual resident’s future career plans.

Suggested topics include:

- ARDS,
- Septic Shock,
- DIC,
- ARF,
- CHI with increased ICP,
- Severe electrolyte abnormalities,
- MOSF,
- Congenital heart post-op care,
- Pediatric Trauma,

PICU residents are asked to present a PICU patient to Morning Report at 0830 on the 2nd Tuesday and the 3rd Thursday of each PICU rotation block. The resident group will choose which resident will present and which patient will be presented. Depending on the PICU activity, all residents and attending can go to morning report or just the resident reporting.

Residents will be asked to participate in ongoing educational research projects or clinical research projects.

Critical care attendings, fellows, pediatric critical care nurse practitioners are welcomed to give a didactic lecture to the resident group if their schedules permit.

Residents’ available time to participate as a group is limited

(Christiana ER residents have conference Wednesday mornings, Jefferson ER residents have conference Thursday mornings, Mondays are usually hectic.)

A brief description of a topic discussed can be emailed to me. This will be entered under Interactive Sessions in PICU resident data base to allow credit for the person giving the lecture.

Critical care attendings are welcome to go to daily pediatric resident morning reports.

If they are actively involved in a discussion, a brief description of a topic discussed can be emailed to me. This will be entered under Interactive Sessions in PICU resident data base.

Mentors are assigned to each resident for their PICU rotation. This is an informal process that allows access to an additional critical care physician if required by resident.

**Evaluation Process**

During the second week of the PICU rotation, each resident will be asked how they are doing and address any concerns if they become evident.

During the last week of the rotation, each resident takes an on-line national pediatric critical care post-test developed for residents completing a PICU rotation. Test score will be forwarded to program director.

During the last week of the rotation, each resident fills out a post-rotation evaluation form. We will use the Pediatric Residency Evaluation form with an additional question about the resident’s comfort level with critically ill children.

An attempt will be made to meet with each resident during the last few days of the rotation.
A pilot project aimed at a multidisciplinary 360° evaluation of residents may be initiated this year by the Pediatric residency Program.

Critical care physicians fill out the specific, resident program evaluation form that documents individual resident ACGME Competencies. They also complete a short form that asks their comfort level with the residents ability to stabilize a critically ill child as well as address Safety and Quality Issues.

Each January, a survey is sent out to residents who have completed a rotation in the PICU and who are now in practice or fellowships. The survey explores their contact with critically ill children and if they are prepared to deal with critical care issues that they encounter.

Biannual reports for the Alfred I duPont Hospital for Children Graduate Medical Education Office Educational Report for NCC Wilmington and Nemours Cardiac Center.
Appendix
# Monthly Maintenance Plans

<table>
<thead>
<tr>
<th>Week</th>
<th>Things to do</th>
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**Monday**

- 0700: Meet with Ilene Sivikoff
  - Ilene will give residents their PICU textbook, PALS card, Beeper, Meal tickets, Cerner class information and have residents sign AIDI GME agreement. Instruct visiting residents to Personnel office to get a Nemours badge. Request resident’s email address. AIDI GME Agreement will be sent to GME office/copy to residents folder.
  - Resident’s email address needed to get a password for SCCM post-test

Dr Cullen will orient residents; show residents call room.

- Visiting residents have Cerner class 1-3PM
- New PICU Core Curriculum placed on PICU work station desk

**Tuesday, Wednesday, Thursday**

- Dr Cullen enters data into data base
  - **New resident**
    - Resident ID
    - Prerotation Questionnaire
    - PICU Profiles
    - Pre-test
  - **Exiting resident**
    - PICU Evaluations
    - Resident Evaluations
    - SCCM Post Test
    - Primary Patient Data
    - Hours

**Friday**

- Dr Cullen completes and sends in Specific Program Evaluation Forms/copy to resident folder and copy to Alfred I duPont Hospital for Children GME office

DR Cullen enters the following as they are done
- Mock Codes
- Interactive PICU Teaching Rounds
Week

<table>
<thead>
<tr>
<th>Monday</th>
<th>Things to do</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Ilene Sivikoff prepares initial draft of curriculum for next month rotation. After the draft is reviewed and approved by Dr Cullen, Ilene sends the next month’s curriculum to PICU Curriculum Distribution List.</td>
</tr>
<tr>
<td></td>
<td>Ilene Sivikoff enters attending clinical teaching days for present rotation period in data base.</td>
</tr>
<tr>
<td></td>
<td>Ilene Sivikoff enters scheduled lectures for the new month rotation in data base.</td>
</tr>
<tr>
<td>Tuesday</td>
<td>PICU residents do patient presentation at Morning Report.</td>
</tr>
<tr>
<td>Thursday, Friday</td>
<td>Dr Cullen (or Mentor) meets briefly with residents individually and checks how they are doing. If Mentor meets with resident, they will provide any feedback to Dr Cullen. If there are concerns about resident performance or resident perception of the PICU rotation, Dr Cullen will discuss issues with the critical care attendings and ask for feedback to give resident.</td>
</tr>
</tbody>
</table>

Dr Cullen enters the following as they are done:
- Mock Codes
- Interactive PICU Teaching Rounds


<table>
<thead>
<tr>
<th>Week</th>
<th>Things to do</th>
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<tbody>
<tr>
<td>Monday, Tuesday, Wednesday</td>
<td></td>
</tr>
<tr>
<td>Ilene Sivikoff</td>
<td></td>
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<tr>
<td>Obtains Cerner training date / password for new residents as needed</td>
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<tr>
<td>Notifies Stentor that resident will need access during time frame provided</td>
<td></td>
</tr>
<tr>
<td>Obtains Jeffline password for resident if needed</td>
<td></td>
</tr>
<tr>
<td>Ilene Sivikoff prepares folder for new resident(s)</td>
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</tr>
<tr>
<td>Place Check-Off sheet on cover</td>
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</tr>
<tr>
<td>Contents</td>
<td></td>
</tr>
<tr>
<td>PICU Curriculum</td>
<td></td>
</tr>
<tr>
<td>2 page introduction of essentials for PICU rotation</td>
<td></td>
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<tr>
<td>Primary patient / Procedure flow sheet</td>
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<tr>
<td>Hours sheet</td>
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<tr>
<td>Educational Prescription Form</td>
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<tr>
<td>Order Entry Protocol</td>
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<tr>
<td>Transferring Patients Protocol</td>
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<tr>
<td>Emergency medication card</td>
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<tr>
<td>IV electrolyte replacement card</td>
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<tr>
<td>Infection control that includes RSV and Rotovirus isolation handout</td>
<td></td>
</tr>
<tr>
<td>Meal tickets</td>
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<tr>
<td>Beeper for visiting residents</td>
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</tbody>
</table>

Dr Cullen will
 Assign ID number
 Assign SCCM post-test password
 Assign Nemours UGI Desktop password as needed

Thursday
 PICU residents do patient presentation at Morning Report

Ilene Sivikoff will send hard copy forms of Specific Program Evaluation Forms for each resident to each critical care attending. Critical care attendings will also receive a form to fill out on each resident that asks about attending comfort levels with resident as regards ARDS, sepsis, etc.

Ilene Sivikoff will coordinate with the Pediatric Residency Office to make sure the appropriate PICU personnel receive the 360° resident evaluation forms

Dr Cullen enters the following as they are done
 Mock Codes
 Interactive PICU Teaching Rounds
<table>
<thead>
<tr>
<th>Week</th>
<th>Things to do</th>
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<tbody>
<tr>
<td>4</td>
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</tbody>
</table>

**Monday**
- Dr Cullen will remind residents to complete
  - SCCM post-test on-line before Friday
  - Evaluation of PICU rotation on-line
  - Primary patient / Procedure form
  - Hours log
- Ilene Sivikoff will remind critical care physicians to complete program evaluations and our check-off comfort level score form and return both to Dr Cullen by Thursday.
- Ask those doing the 360° evaluations to return their completed evaluations to Dr Cullen by Thursday

**Wednesday**
- Journal Club

**Friday**
- Dr Cullen
  - Enter SCCM post-test scores in our data base
- Dr Cullen (or Mentor)
  - Will briefly meet with each residents for an exit interview
  - Provide feedback from critical care attendings and/or 360° evaluations
- Residents will see Ilene Sivikoff before 4PM and Return beeper, textbook, PALS card, primary patient/procedure form, hours log.
- Ilene Sivikoff will
  - Check off on resident folder face-sheet that they have returned their books
  - Give Dr Cullen new Resident Folders (residents who start Monday)
  - Assign books to new residents
    - Record book number ID onto resident file face sheet
  - Send 360° evaluations to Pediatric Residency Office

Dr Cullen will enter the following as they are done
- Mock Codes
- Interactive PICU Teaching Rounds
Additional PICU Resident Rotation Support

July, August, September, October

Dr Cullen will update PICU Resident Rotation Nemours site
Contact person
Lucy Knouse, Jacksonville

November

Ilene Sivikoff prepares mailing list of residents who have been in PICU recently and are now out in practice.

December

Ilene mails surveys to residents. Self addressed mailing envelope also included in order to send back survey
Dr Cullen completes bi-annual GME data requests

January, February, March

Dr Cullen enters survey data into PICU resident data base

April, May, June

Dr Cullen and Ilene Sivikoff prepare a Review of PICU Resident Rotation and Preparation of Goals / Curriculum for next academic year
Dr Cullen updates PICU Resident Rotation Nemours site
Contact person
Lucy Knouse, Jacksonville
Dr Cullen completes bi-annual GME data requests

Additional

Journal Club
Ilene Sivikoff will assist in securing CME for PICU monthly Journal Club

Access Data Base
Ilene Sivikoff will be encouraged to pursue Advanced Access training so that she will be able to help develop new Forms, Reports and Macros for the PICU Resident Education data base.

Purchasing
Ilene Sivikoff will assist in purchasing textbooks as needed for the PICU rotation.
Quality Improvement

Data Collection
Pediatric ICU Rotation
Pre-Rotation Questionnaire

Name ________________________________

PGY2 ________ PGY3 _________

TJU Pediatric Residency Program

MCD ER _________

TJU ER _________

Other ______________________________

1. Have you had any previous ICU experience?

   Pediatric: ________________________________

   Neonatal: ________________________________

   Adult: MICU___ CCU___ SICU___ Trauma ICU___

2. Which of the following procedures have you had experience with? If experience with infants and children, mark (P). If experience with adults, mark (A).

   ______ Intubation of infant <1 year

   ______ Intubation of children > 1 year and adolescents

   ______ Intubation of adults

   ______ Use of muscle relaxants for intubation

   Central Line Placement

   _____ Internal Jugular

   _____ Subclavian

   _____ Femoral Vein

   ______ Arterial Catheter Placement

   _____ Radial

   _____ Femoral

   _____ Posterior tibial

   _____ Dorsalis pedis

   ______ Chest tube placement

   _____ Pigtail chest tube placement

   ______ Emergency defibrillation

   ______ Elective cardioversion

   ____ External pacemaker

3. Have you ever been in charge of an actual pediatric resuscitation?

   a. yes

   b. no

4. In an actual infant or pediatric resuscitation, have you EVER personally provided:

   (Circle all that apply)

   a. Chest compressions

   b. Any form of ventilation (i.e. Mouth to mouth, mouth to mask, BVM, ET)

   c. Specifically Mouth to Mouth (or Mouth to Barrier Device) ventilation

   d. None of the above

5. WITHIN THE PAST 2 YEARS, in an actual infant or pediatric resuscitation, have you personally
provided:
(Circle all that apply)
  a. Chest compressions
  b. Any form of ventilation (i.e. Mouth to mouth, mouth to mask, BVM, ET)
  c. Specifically Mouth to Mouth (or Mouth to Barrier Device) ventilation
  d. None of the above

6. At duPont hospital for Children, what is the number you call to activate a code blue?

7. What do you anticipate learning from this PICU rotation that will prepare you for your pediatric or emergency medicine career goals?

8. You learn a new medical topic best by:

   ______ Participating in daily unit rounds with an attending physician
   ______ Formal lectures
   ______ Asking attending physicians direct questions about present patients care
   ______ Formal reading program that covers basic topics in the field of study
   ______ Looking up the answers to your questions in a recent medical textbook
   ______ Reviewing critically recent literature on pertinent patient problems as they arise during your rotation (medline searches)
   ______ Participating in mock drills regarding patient care scenarios
   ______ Direct patient care with as many patients as possible
   ______ Give a talk about what you are trying to learn
9. How comfortable do you feel evaluating and stabilizing a critically ill child.

Scale: 0 = No exposure to base a decision on.
       10 = Full independence

0  1  2  3  4  5  6  7  8  9  10

10. How comfortable do you feel recognizing and initially managing critically ill children with the following problems?

Scale: 0 = No exposure to base a decision on.
       10 = Full independence

Acute respiratory Failure
0  1  2  3  4  5  6  7  8  9  10

Hemodynamic instability
0  1  2  3  4  5  6  7  8  9  10

Sepsis
0  1  2  3  4  5  6  7  8  9  10

Acute Neurologic Insults
0  1  2  3  4  5  6  7  8  9  10

Acute electrolyte and endocrine disorders
0  1  2  3  4  5  6  7  8  9  10

Acute renal failure
0  1  2  3  4  5  6  7  8  9  10

Coagulation disorders
0  1  2  3  4  5  6  7  8  9  10

Overdoses and Poisonings
0  1  2  3  4  5  6  7  8  9  10
11. Please carefully look over all the nine profiles below, which describe your ideal pediatric critical care experience regarding resident clinical supervision, resident procedural supervision, the teaching format and the resident evaluation process. Then rank all the profiles from 9 (best) to 1 (worst).

<table>
<thead>
<tr>
<th>Profile</th>
<th>Clinical</th>
<th>Procedural</th>
<th>Teaching Style</th>
<th>Resident Evaluation</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Independent after demonstrating ability</td>
<td>Tightly structured with close supervision</td>
<td>Scheduled formal lectures with prep reading</td>
<td>Oral interview with attending</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Tightly structured with close supervision</td>
<td>Flexible with supervision</td>
<td>Independent study program</td>
<td>Oral interview with attending</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Tightly structured with close supervision</td>
<td>Tightly structured with close supervision</td>
<td>Interactive patient rounds with attending</td>
<td>Essay response to case scenarios</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Flexible with supervision</td>
<td>Independent after demonstrating ability</td>
<td>Interactive patient rounds with attending</td>
<td>Oral interview with critical care attending</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Flexible with supervision</td>
<td>Tightly structured with close supervision</td>
<td>Independent study program</td>
<td>Presentation</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Flexible with supervision</td>
<td>Flexible with supervision</td>
<td>Scheduled lectures, reading preparation</td>
<td>Essay response to case scenarios</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Independent after demonstrating ability</td>
<td>Independent after demonstrating ability</td>
<td>Independent study program</td>
<td>Essay response to case scenarios</td>
<td></td>
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<tr>
<td>8.</td>
<td>Tightly structured with close supervision</td>
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</table>
Nemours Education Innovation Program
Promoting
Evidence Based Clinical Practice

Pre-Questionnaire

Name: 
Age (yrs): 
Sex: 

PICU Staff Physicians:

Years post fellowship

Fellows:

Program (Other)
Year

Residents:

PGY Year
Program Type (Other)

Medical Students:

Year (Other)
Medical School

RNs:

Specialty
Years post initial training

1 Have you been exposed to Evidence Based Clinical Practice principles in any of the following formal training programs? (Check all that apply)

- Yes Medical school
- Yes Medical internship
- Yes Medical residency program
- Yes Medical fellowship program
- Yes Nursing school
- Yes Respiratory therapy program
- Yes Pharmacy program
- Yes Graduate program
- Yes PhD program

2 Have you participated in any Evidence Based Clinical Practice continuing education workshop?

- Yes
- No

3 Have you participated in the McMaster University workshop How To Teach Evidence Based Clinical Practice?

- Yes
- No

4 How long ago did you participate in an Evidence Based Clinical Practice workshop?

- < 6 months
- 6 months - 1 year
- 1-2 years
- 2-5 years
- > 5 years

5 How important is it to your **day-to-day clinical practice** to have the skills to find and appraise the most recent literature?
6. How confident are you in your ability to **ask a focused clinical question** in order to address a patient related problem?

<table>
<thead>
<tr>
<th>Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the time</td>
<td>Most of the time</td>
</tr>
<tr>
<td>Sometimes</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Rarely</td>
<td>Rarely</td>
</tr>
<tr>
<td>Never</td>
<td>Never</td>
</tr>
</tbody>
</table>

7. How confident are you in your ability to **search the literature** in order to find the most relevant articles that address your focused clinical questions?

<table>
<thead>
<tr>
<th>Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the time</td>
<td>Most of the time</td>
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<tr>
<td>Sometimes</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Rarely</td>
<td>Rarely</td>
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<tr>
<td>Never</td>
<td>Never</td>
</tr>
</tbody>
</table>

8. How confident are you in your ability to **evaluate what is being studied** in the articles you find?

<table>
<thead>
<tr>
<th>Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the time</td>
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<td>Rarely</td>
</tr>
<tr>
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<td>Never</td>
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</tbody>
</table>

9. How confident are you in your ability to **determine the validity of the articles** that you find?

<table>
<thead>
<tr>
<th>Always</th>
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</thead>
<tbody>
<tr>
<td>Most of the time</td>
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<tr>
<td>Sometimes</td>
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<tr>
<td>Rarely</td>
<td>Rarely</td>
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<tr>
<td>Never</td>
<td>Never</td>
</tr>
</tbody>
</table>
1 How confident are you in your ability to \textit{ascertain the results and the preciseness of the results} of the articles that you find?

<table>
<thead>
<tr>
<th>Always</th>
<th>Most of the time</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

1 How confident are you in your ability to judge if the \textit{results} of the articles you find are \textit{applicable to your patient}?

<table>
<thead>
<tr>
<th>Always</th>
<th>Most of the time</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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<tbody>
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</tbody>
</table>

1 Do you feel that \textit{patient care is improved} when you are able to add to your clinical expertise and appreciation of the patient's \textit{vascular system} the ability to access and evaluate the most up to date information that pertains to your patient's needs?

<table>
<thead>
<tr>
<th>Always</th>
<th>Most of the time</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</thead>
<tbody>
<tr>
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</table>
### Rate the following aspects of the rotation

<table>
<thead>
<tr>
<th>Circle one:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) strongly disagree; (2) disagree; (3) neutral; (4) agree; (5) strongly agree)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I was made aware of the expectations of the rotation?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. I was a valuable member of the team?</td>
<td></td>
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<tr>
<td>3. I was given an appropriate level on independence?</td>
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<tr>
<td>4. I was given an appropriate level of support/backup?</td>
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<tr>
<td>5. I was expected to think independently during the rotation?</td>
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<tr>
<td>6. I increased my knowledge base during the rotation?</td>
<td></td>
<td></td>
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<tr>
<td>7. I improved my physical exam skills during the rotation?</td>
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<tr>
<td>8. I improved my communication skills during the rotation?</td>
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<tr>
<td>9. I improved my technical skills during the rotation?</td>
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<tr>
<td>10. I felt that my expectations of the rotation were met?</td>
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<td></td>
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<tr>
<td>11. I was given appropriate feedback about my performance?</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Rate the following aspects of the rotation

<table>
<thead>
<tr>
<th>Circle one:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) is not enough; (2) is just right; (3) is too much</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The number of patients seen during the rotation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The time spent in conferences and lectures?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The time spent in contact with patients?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The amount of teaching done by fellow residents?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The amount of teaching done by attendings?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. The duration of the rotation?</td>
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</tr>
</tbody>
</table>

### Overall score given to rotation

(1) weak rotation; (5) average rotation; (10) great rotation

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<td></td>
</tr>
</tbody>
</table>

### What are the strongest assets of this rotation?

### How would you improve this rotation?

### Any other comments about this rotation?
Rate each attending (fellow) that you had contact with on the rotation

Circle one: (1) strongly disagree; (2) disagree; (3) neutral; (4) agree; (5) strongly agree

<table>
<thead>
<tr>
<th>Attending's Name:</th>
<th>Attending's Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>He/She valued my presence during</td>
<td>He/She valued my presence during</td>
</tr>
<tr>
<td>the rotation?</td>
<td>the rotation?</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>He/She encouraged me to think</td>
<td>He/She encouraged me to think</td>
</tr>
<tr>
<td>independently?</td>
<td>independently?</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>He/She took time to teach me</td>
<td>He/She took time to teach me</td>
</tr>
<tr>
<td>during the rotation?</td>
<td>during the rotation?</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>He/She is an effective teacher?</td>
<td>He/She is an effective teacher?</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>He/She is an effective role</td>
<td>He/She is an effective role</td>
</tr>
<tr>
<td>model for residents?</td>
<td>model for residents?</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Overall rating of attending</td>
<td>Overall rating of attending</td>
</tr>
<tr>
<td>(1) weak; (5) average; (10) great</td>
<td>(1) weak; (5) average; (10) great</td>
</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Comments:</td>
<td>Comments:</td>
</tr>
</tbody>
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<table>
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<tr>
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</tr>
<tr>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Comments:</td>
<td>Comments:</td>
</tr>
</tbody>
</table>
**Resident’s Comfort Level With Critically Ill Children**

After your one month PICU rotation, I feel comfortable in recognizing and initially stabilizing a seriously ill child or adolescent in the following areas.

<table>
<thead>
<tr>
<th>Scale:</th>
<th>0 = No exposure to base a decision on.</th>
<th>10 = Full independence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute respiratory failure</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>Hemodynamic instability</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
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<td>Sepsis</td>
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</tr>
<tr>
<td>Overdoses and poisonings</td>
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<td></td>
</tr>
<tr>
<td>Overall assessment</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>

Comment
**Resident’s overall clinical competence:**  Unsatisfactory □ Satisfactory □ Superior □ N/A □

<table>
<thead>
<tr>
<th>Below Expectations 1-3</th>
<th>Meet Expectations 4-6</th>
<th>Exceed Expectations 7-9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient Care:</strong> Resident provides compassionate care that is effective for the promotion of health, prevention, treatment, and at the end of life</td>
<td></td>
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<tr>
<td>1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □</td>
<td></td>
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</tr>
<tr>
<td>• Interviews and examines patients poorly, lacks technical proficiency</td>
<td></td>
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<tr>
<td>• Has poor judgement</td>
<td></td>
<td></td>
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<tr>
<td>• Disregards patient preference</td>
<td></td>
<td></td>
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<tr>
<td>• Satisfactory skills in interviewing, physical exam, procedures</td>
<td></td>
<td></td>
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<tr>
<td>• Adequate judgement</td>
<td></td>
<td></td>
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<tr>
<td>• Usually respectful of patient preferences</td>
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<td></td>
</tr>
<tr>
<td>• Performs excellent patient interviews, exam, procedures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Uses sound judgement</td>
<td></td>
<td></td>
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<tr>
<td>• Is highly respectful of patient preference</td>
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<tr>
<td><strong>Medical Knowledge:</strong> Resident demonstrates knowledge of biomedical, clinical and social sciences, and applies that knowledge effectively to patient care.</td>
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<td>1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □</td>
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<td></td>
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<tr>
<td>• Limited knowledge base</td>
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<tr>
<td>• Minimal interest in learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Poor understand of complex problems</td>
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<td></td>
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<tr>
<td>• Solid fund of knowledge</td>
<td></td>
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</tr>
<tr>
<td>• Satisfactory learner</td>
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<tr>
<td>• Adequately understands complex problems</td>
<td></td>
<td></td>
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<tr>
<td>• Exceptional knowledge base</td>
<td></td>
<td></td>
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<tr>
<td>• Committed to continuous learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Has comprehensive understanding of complex problems.</td>
<td></td>
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</tr>
<tr>
<td><strong>Practice-Based Learning &amp; Improvement:</strong> Resident uses evidence and methods to investigate, evaluate, and improve his/her patient care.</td>
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<tr>
<td>1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □</td>
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<tr>
<td>• Minimizes or ignores self-assessment</td>
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<tr>
<td>• Avoids new technology</td>
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<td></td>
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<tr>
<td>• Ignores feedback</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Intermittently self-assesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Intermittently uses new technology</td>
<td></td>
<td></td>
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<tr>
<td>• Intermittently seeks feedback</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Regularly self-assesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Uses new technology consistently</td>
<td></td>
<td></td>
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<tr>
<td>• Eagery accepts feedback</td>
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</tr>
<tr>
<td><strong>Communication &amp; Interpersonal Skills:</strong> Resident demonstrates these skills and maintains professional &amp; therapeutic relationships with patients &amp; the healthcare team.</td>
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<tr>
<td>1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □</td>
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<td></td>
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<tr>
<td>• Has poor relationships with patients/families</td>
<td></td>
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<tr>
<td>• Avoids educating or counseling patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Incomplete, illegible medical records</td>
<td></td>
<td></td>
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<tr>
<td>• Maintains satisfactory relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Intermittently educates, counsels patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Usually maintains complete, legible records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Establishes excellent relationships with patients/families</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Educates and counsels patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Always maintains comprehensive; timely, legible medical records</td>
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<tr>
<td><strong>Professionalism:</strong> Resident demonstrated behaviors that reflect an ongoing commitment to continuous professional development, ethical practice, sensitivity to diversity, and responsible attitudes.</td>
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<tr>
<td>1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □</td>
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</tr>
</tbody>
</table>
- Not respectful.
- Not compassionate
- Dishonest
- Avoids responsibility for errors
- Not considerate of others

- Usually respectful
- Usually compassionate
- Endeavors to be honest
- Recognizes errors
- Tries to be considerate of others

- Consistently respectful
- Very compassionate
- Is honest
- Accepts responsibility for errors
- Considers needs of others (patients/colleagues)

### Systems-Based Practice:
Resident demonstrates both an understanding of the contexts and systems in which health care is provided and applies this knowledge to improve and optimize health care.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor utilization of resources</td>
<td>Adequate resource utilization</td>
<td>Effectively uses resources</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Makes no attempt to reduce errors</td>
<td>Tries to reduce errors</td>
<td>Reduces errors</td>
<td></td>
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</tr>
<tr>
<td>Resists improvement to systems of care</td>
<td>Tries to improve systems of care</td>
<td>Improves systems of care</td>
<td></td>
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</tr>
</tbody>
</table>
Resident’s Name: ___________________________ Training Level: PGY II
Service: PICU - duPont Evaluator: _______________________
Dates of Rotation: ___________________________________

Please circle appropriate scores below:

1  Severe deficits
2  Marginal competence
3  Expected competence
4  Above expected competence
5  Outstanding competence
X  Unable to evaluate

<table>
<thead>
<tr>
<th>Patient Care:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has developed skills in infant/pediatric resuscitation</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Has developed skills in performance of pediatric H &amp; P</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Has developed proficiency in pediatric procedures</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical Knowledge:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understands the manifestations, differential diagnosis and significance of common pediatric emergencies</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Understands specific problems of pediatric &amp; trauma victims</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Has a good knowledge base of pediatric illnesses, their presentation and management</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Practice Based Learning &amp; Improvement:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate commitment to improvement</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Effectiveness in teaching med students &amp; residents</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Adaptation to new technology</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpersonal &amp; Communication Skills:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship w/other healthcare personnel</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Effectiveness as team member</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professionalism:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compassion &amp; Empathy</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Willingness to accept feedback</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Adherence to professional &amp; ethical standards</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systems Based Practice</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity to patients age,sex,gender,culture</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Effectiveness in managing health care resources</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Consideration of costs of diagnosis &amp; management</td>
<td>X</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Comments and Recommendations:

This evaluation is based on personal contact of and average of ______ hours/week for ______ weeks.
Have you discussed this evaluation with the resident? _____ yes _____ no

______________________________        ________________________
Signature                        Date

The most valuable part of this form is the evaluator's comments. You are strongly encouraged to record your specific comments concerning this house officer's performance. In particular, note individual strengths and weaknesses and suggest ways in which individual performance could be improved.

Comments:

______________________________________________________________________

______________________________________________________________________

In evaluating the resident's performance, use as your standard the level of knowledge, skills and attitudes expected from the clearly satisfactory resident at this state of training. For any component that needs attention or is rated a 4 or less, please provide specific comments and recommendations in the comment section above or below. Be as specific as possible, including reports of critical incidents and/or outstanding performance. Global adjectives or remarks, such as "good resident," do not provide meaningful feedback to the resident.

1 Patient Care

Incomplete, inaccurate medical interviews, physical examinations, and review of other data; incompetent performance; fails to analyze clinical data and consider patient preferences when making medical decisions.

Unsatisfactory Satisfactory Superior
Y 1 2 3 4 5 6 7 8 9

Performance needs attention
Insufficient contact to judge

2 Medical Knowledge

Limited knowledge of basic and clinical sciences; minimal interest in learning; does not understand complex relations, mechanisms of disease

Unsatisfactory Satisfactory Superior
Y 1 2 3 4 5 6 7 8 9

Performance needs attention
Insufficient contact to judge

Superb, accurate, comprehensive medical interviews, physical examinations, review and procedural skills; always makes diagnosis and therapeutic decisions based on available evidence, sound judgment, and patient preferences.

Exceptional knowledge of basic and clinical sciences; highly resourceful development of knowledge; comprehensive understanding of complex relationships, mechanisms of disease.
<table>
<thead>
<tr>
<th>Category</th>
<th>Performance needs attention</th>
<th>Insufficient contact to judge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3 Practice-Based Learning/Improvement</strong></td>
<td></td>
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</tr>
<tr>
<td>Fails to perform self-evaluation; lacks insight, initiative; resists or ignores feedback; fails to use information technology to enhance patient care or pursue self-improvement</td>
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<tr>
<td>Constantly evaluates own performance, incorporates feedback into improvement and effectively uses technology to manage information for patient care and self-improvement</td>
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<tr>
<td><strong>4 Interpersonal and Communication Skills</strong></td>
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<tr>
<td>Does not establish even minimally effective therapeutic relationships with patients and families; does not demonstrate ability to build relationships through listening, narrative or nonverbal skills; does not provide education or counseling to patients, families or colleagues</td>
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</tr>
<tr>
<td>Establishes a highly effective therapeutic relationship with patients and families; demonstrates excellent relationship building through listening, narrative and nonverbal excellent education and counseling of patients, families, and colleagues; always &quot;interpersonally engaged&quot;</td>
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<tr>
<td><strong>5 Professionalism</strong></td>
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<tr>
<td>Lacks respect, compassion, integrity, honesty; disregards need for self-assessment; fails to acknowledge errors; does not consider needs of patients, families, colleagues; does not display responsible behavior</td>
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</tr>
<tr>
<td>Always demonstrates respect, compassion, integrity, honest; teaches/role models responsible behavior; total commitment to self-assessment; willingly acknowledges errors; always considers needs of patients, families, colleagues</td>
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<tr>
<td><strong>6 Systems-Based Practice</strong></td>
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<tr>
<td>Unable to access/mobilize outside resources; actively resists efforts to improve systems to care; does not use systematic approaches to reduce errors and improve patient care</td>
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<tr>
<td>Effectively accesses/ utilizes outside resources; effectively uses systematic approaches to reduce errors and improve patient care; enthusiastically assists in developing systems’ improvement</td>
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</table>

**Resident’s Overall Clinical Competence**
<table>
<thead>
<tr>
<th>Total Contact Hours with Resident per Block</th>
<th>☐ &lt;2</th>
<th>☐ 2-10</th>
<th>☐ 11-20</th>
<th>☐ &gt;20</th>
</tr>
</thead>
</table>

☐ Performance needs attention

☐ Insufficient contact to judge

Sr. EM Resident’s Signature

Date Signed
Critical Care Attendings’ Comfort Level With PICU Residents

From my observations of the resident during the one month PICU rotation, I feel she/he has the potential to be effective as a third year resident in recognizing and initially stabilizing a seriously ill child or adolescent in the following areas.

Scale:   0 = No exposure to base a decision on.  
        10 = Full independence

<table>
<thead>
<tr>
<th>Condition</th>
<th>Score</th>
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<tbody>
<tr>
<td>Acute respiratory failure</td>
<td>0</td>
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<tr>
<td>Hemodynamic instability</td>
<td>0</td>
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<tr>
<td>Sepsis</td>
<td>0</td>
</tr>
<tr>
<td>Acute Neurologic Insults</td>
<td>0</td>
</tr>
<tr>
<td>Acute electrolyte and endocrine disorders</td>
<td>0</td>
</tr>
<tr>
<td>Acute renal failure</td>
<td>0</td>
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<tr>
<td>Coagulation disorders</td>
<td>0</td>
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<tr>
<td>Overdoses and poisonings</td>
<td>0</td>
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</table>

<table>
<thead>
<tr>
<th>Overall assessment</th>
<th>Score</th>
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<tbody>
<tr>
<td>Resident demonstrates concern for patient safety.</td>
<td></td>
</tr>
<tr>
<td>4=Exceeds expectations 3=Meets expectations 2=Needs improvement 1=Major are of deficiency</td>
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<table>
<thead>
<tr>
<th>Overall assessment</th>
<th>Score</th>
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<tbody>
<tr>
<td>Resident demonstrates concern for patient quality of care.</td>
<td></td>
</tr>
<tr>
<td>4=Exceeds expectations 3=Meets expectations 2=Needs improvement 1=Major are of deficiency</td>
<td></td>
</tr>
</tbody>
</table>

Comment

Resident demonstrates concern for patient safety.

Resident demonstrates concern for patient quality of care.