



The
**Pediatric Critical Care
Fellowship Program**
of the
University of Minnesota



Introduction

Welcome to the University of Minnesota PICU fellowship. Ours is a fully accredited pediatric critical care fellowship program whose goals include: providing educational and clinical experience so that you will be proficient in your ability to care for and manage critically ill children; providing you with research opportunities in any of a number of fields that may be of interest to you; and to encourage you to involve yourself in the education of pediatric residents and medical students, as well as other health care professionals. At the end of your fellowship, you will be well positioned to pursue a pediatric critical care career in any capacity, including academic medicine.

This information is meant to provide you an overview of the fellowship, our PICU fellow's responsibilities, and orient you to some of the physical plant of the Fairview-University Hospital. Hopefully this will provide you with a template of sorts, and a resource to answer some frequently asked questions that you might have as you pursue or start your fellowship. We look forward to working with you.



Faculty

Staff Primarily at Fairview-University (with their professional interests):

David Cornfield MD: Professor of Pediatrics; Director of Pulmonary and Critical Care Medicine. Board Certified in Pediatric Pulmonary and Critical Care Medicine. Interests include pulmonary vascular reactivity, ontogeny of ion channel control of pulmonary vascular tone, inhalational nitric oxide, high frequency oscillatory ventilation, developmental lung biology, molecular regulation of pulmonary vascular ion channel expression.

Imad Haddad MD: Associate Professor of Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include oxidant lung injury, protein modifications by free radicals, acute lung injury, idiopathic pneumonia syndrome in bone marrow transplantation, surfactant protein as a defense molecule.

Marie Steiner MD: Associate Professor of Pediatrics (joint appointment with Hematology/Oncology). Board Certified in Pediatric Critical Care Medicine and Pediatric Hematology/Oncology. Interests

include acute cardiopulmonary injury due to hemo/radiotherapy, etiology and treatment of multi-system organ failure, coagulation abnormalities.

Michael Sweeney MD: Associate Professor of Pediatrics and Anesthesiology. Board Certified in Pediatric Critical Care Medicine and Anesthesiology. Interests include calcium homeostasis, cardiovascular anesthesiology, cardiovascular physiology, pharmacology.

Richard Wendorf MD: Instructor in Pediatrics. Board Eligible in Pediatric Critical Care Medicine. Interests include oxygen sensing and calcium signaling in pulmonary vascular endothelial cells, medical education, pediatric cardiopulmonary resuscitation. Associate Director of Pediatric Critical Care Medicine Fellowship Program.

Arif Somani MD: Instructor in Pediatrics. Board Eligible in Pediatric Critical Care Medicine. Interests include blood outgrowth endothelial cell as potential gene vectors, clinical critical care. Holds Canadian certification in Family Practice and Community Medicine, Pediatrics and Pediatric Critical Care Medicine.

Affiliated staff (with professional interest):

Andrew Ozolins MD: Assistant Professor of Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include clinical critical care, medical education.

Steven Baisch MD: Instructor in Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include clinical critical care, medical education, cardiopulmonary resuscitation, transport medicine.

Michael Vespasiano MD: Assistant Professor of Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include clinical critical care, neutrophil-mediated tissue damage, extracorporeal circulation.

Judith Zier MD: Assistant Professor of Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include perfluorocarbon ventilation, acute respiratory failure, computer based medical education, outcome measures in pediatric critical care.

Ken Maslonka MD: Clinical Instructor in Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include clinical critical care, medical education

Peter Thill MD: Clinical Instructor in Pediatrics. Board Certified in Pediatric Critical Care Medicine. Interests include clinical critical care, medical education.

Fellows:

Lara Nelson MD: Third year fellow in Pediatric Critical Care Medicine. Residency in Pediatrics and Child Psychiatry, Brown University.

Lakshmi Raman MD: Third year fellow in Pediatric Critical Care Medicine. Residency in Pediatrics, Children's Medical Center of Brooklyn.

Sherri Crow MD: First year fellow in Pediatric Critical Care Medicine. Residency in Pediatrics, University of Minnesota.



Facilities

Hospitals:

As a pediatric critical care fellow at the University of Minnesota you primarily will spend time in the PICU's at three hospitals in the Twin Cities.

Fairview-University Medical Center: A 22 bed pediatric intensive care unit in a tertiary health care center. A majority of your clinical PICU rotations as a PICU fellow will be here. Care is provided for a variety of patients, weighted somewhat toward post-operative care (especially post-operative cardiac care). Unique experiences here include care of complex congenital heart disease (both pre- and post-op), care of critically ill children with solid organ and bone marrow transplants, and management of patients requiring ECMO (Extracorporeal Membrane Oxygenation).

Children's Hospital of St. Paul: A 12 bed pediatric intensive care unit in a private community hospital. A wide variety of patient care is provided; including management of medical PICU patients and management of chronically ventilator dependant children.

Gillette Children's Hospital: A 7 bed pediatric intensive care unit associated with a hospital which emphasizes the care of children with special needs. The PICU is also associated with Regions Hospital, a level one trauma center in St. Paul. Again, a variety of patients are seen, with emphasis on orthopedic post-operative management of special needs children, and management of trauma patients.

Department of Pediatrics at the University of Minnesota:

The Department of Pediatrics of the University of Minnesota is a large, academically oriented department with a strong research base. It was established in 1915 and has grown to encompass all phases of pediatric medicine. The Department has over 100 full-time faculty who provide care in all the major medical facilities of the Twin Cities. In addition, there are over 250 practicing pediatricians in the region who enjoy clinical faculty appointments and contribute to the educational mission of the Department of Pediatrics. All the major pediatric subspecialties are well represented in the Department, and as a Fellow in the Division of Pediatric Critical Care you will work closely with all of them, including Bone Marrow Transplantation, Endocrinology, Gastroenterology, Infectious Disease, Immunology, Pulmonology, Neonatology, Cardiology, Hematology/Oncology, Nephrology, Neurology, Rheumatology, Genetics and Metabolism, General Pediatrics, and many of the surgical subspecialties (including Pediatric General Surgery, Cardiothoracic Surgery, ENT, Neurosurgery, Solid Organ Transplantation). Many of these subspecialties have active fellowship programs as well.

Educational Resources:

The biomedical library contains over 333,000 volumes with over 4000 current journal subscriptions. The library is physically connected to Fairview-University Medical Center. Copying equipment and computers (Macintosh and IBM or compatibles) are available for the fellow's use. Besides the excellent search facilities at the library we have capabilities to do literature searches on our personal computers.



Curriculum

During the three years of your fellowship, you will have a number of clinical rotations to provide you with the experiences necessary to effectively manage critically ill children when you complete your fellowship. Following is a brief description of the rotations, followed by a template of what the three years entail.

Fairview-University PICU (5C): Fellows on rotation here actively direct, under the supervision of a staff intensivist, the management of critically ill children in the PICU. A majority of a fellows ICU clinical time takes place here.

Children's Hospital PICU: During rotation here, fellows manage the patients on the PICU, and day to day running of the unit, under the direction of the staff intensivists of Children's Hospital.

Anesthesiology: One month of the fellowship will be spent on an anesthesia rotation at Fairview-University hospital under the direction of Dr. Sweeney. Specific goals of this rotation include gaining concentrated experience in a variety of procedures (intubation, airway management, central and arterial lines, IV's, etc.), the use of many sedative/anesthetic agents including the reversal of such agents, and perioperative patient management.

NICU: Fellows will do one month on the NICU (Neonatology) at Fairview-Riverside hospital. Fellows will be expected to work with the NICU fellows and staff and gain experience in unique aspects of the management of critically ill children during their first month of life.

Pulmonary: During this rotation the PICU fellow will manage pediatric inpatients with primarily pulmonary problems, provide a pulmonary consultation service for other pediatricians, and see children in pulmonary clinic---all under the direction of the staff pulmonologist. Fellows will also assist in bronchoscopies, and gain experience in the utilization and interpretation of pulmonary function tests.

Sedation: Fellows assigned to the sedation rotation are primarily responsible for the administration of conscious sedation and airway management for pediatric inpatients undergoing procedures at Fairview-University hospital, under the direction of the PICU staff.

Elective: During elective times, a fellow may pursue additional experience(s) in any related field. Fellow will be responsible for arranging their chosen elective experience. Examples include clinical time in the MICU, SICU, Cardiology, Cardiothoracic or other surgery, Interventional Radiology, etc. Further experience in Anesthesiology, Pulmonology, NICU, etc may also be selected. Electives should be discussed with the fellowship director.

Research: A significant portion of the fellowship after the first year is devoted to pursuing independent research in either a clinical or basic science setting. Eighteen months total of fellowship is dedicated to protected research time. A wide variety of opportunities are available for research in many areas; fellows may pursue projects in areas in which they have a previous interest, or in areas in which they have developed an interest during their fellowship.

Template:

What follows is a sample template of which rotations a PICU fellow will have during their three year fellowship. It should be noted that there is a certain amount of flexibility in the schedule depending upon individual fellow and program needs. However, by the end of the three years, each fellow should have a similar broad experience. Rotation periods are 3 or 4 weeks.

-Year One: The main focus of this year is clinical, although fellows are encouraged to consider future research ideas.

- 4 – 5 rotations in the PICU at Fairview-University Hospital
- 2 rotations at Children’s Hospital in St. Paul PICU
- 2 rotations on the Sedation rotation at Fairview-University
- 1 rotation of Anesthesia
- 1 rotation on the Pediatric Pulmonology Service at Fairview-University
- 1 rotation on the NICU at Fairview-Riverside Hospital
- 1 – 2 elective rotations
- 1 – 2 research rotations

-Year Two: Main focus changes from clinical time to research.

- 2 – 3 rotations in the PICU at Fairview-University Hospital
- 1 – 2 rotations at Children’s Hospital in St. Paul PICU
- 1 elective rotation
- 1 – 2 weeks or more as junior staff at Gillette Hospital PICU (near end of year)
- Completion of rotations not completed during year one
- Remainder of year devoted to pursuing research activities

-Year Three: Bulk of the year spent on research activities. May spend some further self scheduled elective time if able to and still fulfill research requirements.

- 1 – 2 rotations at Fairview-University Hospital PICU
- 1 – 2 rotations at Children’s Hospital in St. Paul PICU
- 3 – 4 weeks as junior staff at Gillette Hospital PICU
- Rest of year pursuing research activities

Call:

During your rotations on PICU service on 5C (Fairview-University) or Children’s Hospital in St. Paul your call schedule will be every third night. These calls are in-house, during which time you frequently will be the senior most pediatrician in the hospital. There is no at home call during these rotations.

For all other rotations, you will take one overnight call per week on the PICU at Fairview-University. One of these calls per month will be a weekend day. On weekdays, your on-call responsibilities begin at 4PM, and continue through 8AM the following morning. Weekend call runs 8AM – 8AM.

Educational Activities:

A number of educational conferences are provided throughout the week that the pediatric fellows are expected to attend, unless clinical responsibilities render them unable to do so. There are also always a number of conferences in varying areas throughout the University (i.e. pediatric resident morning report, laboratory and research conferences/journal clubs, other subspecialty conferences, etc.), and you are welcome to attend any of these you are interested in on an optional basis. A weekly schedule of expected activities, along with a brief description of the conference follows:

- Monday:** 12 – 1 PM: Pediatric Pulmonary & Critical Care Conference---A conference for the staff, fellows, residents, etc., consisting of case presentations and discussions, clinical journal club, or current concepts review of a topic. Weekly conferences are led by a previously designated fellow or staff.
- Tuesday:** 2 – 3 PM: Pediatric Critical Care Fellows Conference---Fellow led conference about current topics and reviews of the current literature in clinical pediatric critical care.
- Wednesday:** 12 – 1 PM: Pediatric Grand Rounds
- Thursday:** 12-1 PM: Research Based Journal Club. 1st Thursday of each Month
- Friday:** 12 – 1 PM: Pediatric Morbidity, Mortality, and Management Conference

Research:

The University of Minnesota in general, and the Dept. of Pediatrics in particular, has a thriving research community. Because of this, PICU fellows have the opportunity to pursue research interests in a wide variety of areas (clinical and basic science) both within and outside the Department of Pediatrics. Most of your research experience will be during your second and third years. During your first year however, you should consider what potential research interests you have, and begin exploring them. The fellowship director can help guide you through your initial research options.

Stipends and Benefits:

The beginning annual stipend is set for all residents and fellows at the University of Minnesota annually in July. This is adjusted depending on the number of years the fellow is post-pediatric residency. All Fellows of this Department are registered as graduate students of the Medical School and have the resultant student privileges. Tuition and fees are paid by the Department. Fellows will be supported to attend one national critical care related meeting during their second and third years of fellowship. Other benefits include: health insurance (single coverage fully paid, or family coverage available with fellow contribution), paid life insurance, paid disability insurance, paid malpractice insurance coverage for all clinical training experiences, copying, literature searches, general office supplies, the use of computers and laser printers, office space, and access to laboratory and secretarial assistance.

Other:

Other brief items not covered elsewhere:

Offices: As a PICU fellow, you will share office space with other PICU and pulmonary fellows. Computers in the office are available for your use.

Transport: As the PICU fellow on clinical service, you may be asked to speak with a physician regarding the transport of a sick child from an outside institution. You will have to help determine the mode of transportation (ground, air, etc.), and whether or not a physician (i.e. you or one of the other PICU fellows) should go with the flight nurse/EMT. Occasionally you may be asked to go on a transport when you are not on PICU clinical service, if for some reason the fellow on clinical service cannot go.

Parking, lab coats, e-mail, pagers, etc. will be provided by the Department/University.

Moonlighting: If you choose to do so, there are moonlighting opportunities available for you to do during your non-service rotations. By virtue of your position as a pediatric intensivist, you likely will be asked to teach pediatric advanced life support (PALS) at the University; and you will likely be asked if you would like to earn extra money by

taking 'transport call' for the NICU (be on call at home for transportation of ill neonates). Both of these opportunities are optional, and you are under no obligation to do either.



The Community

The Twin Cities of Minneapolis and St. Paul are ethnically diverse communities, well known for their quality of life. Their cultural and artistic facilities are numerous, including the Minnesota Symphony, the St. Paul Chamber Orchestra, the Guthrie Theater, the Minnesota Opera Company, the St. Paul Science Museum of Minnesota and Omni Theater, the Minneapolis Museum of Art, the Walker Art Museum and Sculpture Garden, the Minnesota Zoo, the Como Park Zoo, the Como Park Conservatory, and the Arboretum of the University of Minnesota. In addition, there are a large number of musical and theatrical events each year produced locally or by national touring companies. And, of course, there is the Mall of America

Sports, both spectator and participatory, play a large role in the life of Minnesotans. Professional sports include football (Minnesota Vikings), baseball (Minnesota Twins and St. Paul Saints), basketball (Minnesota Timberwolves and Minnesota Lynx), and hockey (Minnesota Wild). Many opportunities for viewing collegiate sports are available on the University of Minnesota campus. The extensive city and county park systems offer a wide variety of all-season participatory sports such as running, cycling, canoeing, swimming, sailing, ice skating, fishing, hunting, cross-country and downhill skiing. State and national parks that are within an easy drive offer a wide range of outdoor activities.

Both of the Twin Cities and their suburbs have quality schools noted for their strong programs in both academic subjects and enrichment programs. There are numerous affordable residential areas in each city easily accessible to the University of Minnesota and to our affiliated hospitals.

Again, welcome to the University of Minnesota. We are confident that if you choose to, you will complete your training here with all the skills needed to pursue your career in pediatric critical care medicine.