Division Spotlight: Pediatric Critical Care

The Division of Pediatric Critical Care is comprised of 10 board-certified pediatric intensivists whose primary purpose is to provide exceptional clinical care to every pediatric patient (from infancy to late adolescence) in the 19-bed PICU at Children's Hospital & Medical Center (Children's) and 11-bed PICU at the University of Nebraska Medical Center (UNMC), the former providing 24-hour in-house critical care attending coverage. The Division was created in 1996 with the hiring of Nebraska's first board-certified pediatric critical care physician, Dr. George E. Reynolds, who recently retired in December 2014.

Since 1996, the Division has continued to thrive and grow to meet the critical care needs of critically ill patients at both institutions and is actively recruiting an 11th intensivist at this time. Over 19 years, the Division has continued to evolve to provide our patients with unsurpassed clinical care; within 2 years the Division started providing in-house 24-hour critical care services because the patients needed and deserved this. The Division has over 130 years of collective, dedicated pediatric critical care experience, with 95 of those years specifically at Children's and UNMC. Although providing excellence in care at the bedside remains the Division's primary goal and focus, Division members have, and continue to be, deeply involved in educational, research, patient care, and administrative initiatives at both institutions.

Division members currently serve as:

- Medical directors for 13 programs or departments
- Members on over 30 separate institutional committees
- Chairs of 3 institutional committees
- Members on 12 national/international committees
- Professional consultants for 2 international societies/associations
- Members (4) on Children's Medical Executive Committee
- Committee member (1) on Children's Board of Directors
- Engaged members of numerous quality improvement and process standardization processes at UNMC and Children's
- Six members of the Division have taken advanced medical leadership courses, not only to poise the Division for future success, but also to implement these unique physician-leadership skills at the institutional level as the regional and national healthcare landscape continues to rapidly evolve.
  - One Division member has been recently appointed as the

In This Issue

Faculty
Programs
Academic Pursuits
Patient Care
Thank You

Upcoming Events
Mar 16 | 12:00 PM
Review of Pediatric Scholarship
University Tower 5151

Mar 26 | 7:00 AM
Pediatric Faculty Meeting
CHMC Glow Auditorium

Journal Club
Mar 11 | 12:00 PM
Dr. Shannon Hardy
University Tower 7412

Patient Mgmt Conf.
Mar 3 | 8:00 AM
Dr. Danita Velasco
University Tower 7412

Mar 10 | 8:00 AM
Dr. Matthew Douglass
University Tower 7412

Mar 17 | 8:00 AM
Dr. Christopher Park
University Tower 7412

Mar 24 | 8:00 AM
Dr. Anu Chundu
University Tower 7412

Mar 31 | 8:00 AM
Pediatric Critical Care Faculty

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

Pediatric Critical Care Programs

Several new programs, educational conferences and processes have been spearheaded by members within the Division including:

- Children's Transport
- Simulation
- ECMO
- Hand-In-Hand palliative care programs
- Upper Midwest Regional Pediatric Conference
- Blood culture standardization
- Central line-associated blood stream infection prevention
- Protocol-led ICU sedation
- Pediatric Fundamental Critical Care Support course (institutionally and internationally)
- Resident transport rotation elective
- In-patient osteopenia protocol
- Institutional standardization of post-operative handoff communication
- Prevention of ventilator associated pneumonia (VAPs)
- Physician leadership group deputy for UNMC's EHR implementation

Pediatric Critical Care Academic Pursuits

More recently, the Division has become increasingly active in clinical research and academic pursuits. Recent accomplishments, clinical trials and pilot studies:

- 10 Pediatric Acute Lung Injury & Sepsis Investigations (PALISI) studies
- Randomized evaluation of sedation titration for respiratory failure (RESTORE) study (JAMA, 2015)
- Children's Hospital Association's ASK blood transfusion threshold
study

- Milrinone tissue concentration study in peri-operative pediatric cardiac surgical patients
- Healing touch therapy in PICU patients
- Early markers in acute kidney injury
- Principal investigator for a study comparing efficacy of IV versus IO access during endotracheal intubation
- 2014 recipient of the American Heart Association's (AHA) Resuscitation Science Symposium (ReSS) Young Investigator Award
- Accepted for publication in Pediatric Critical Care Medicine
- Only pediatric-trained recipient of 25 recipients and 15,000 abstracts
- Study investigating intensivists’ acceptance of recently revised brain death guidelines
- Survey describing current pediatric critical care physician demographics and future planning
- Transcranial Doppler study on aortic arch reconstruction (Gerber grant)
- Evaluation of the efficacy of a drowning-prevention training program.
- $400,000 in grant funding from various study and funding agencies, over the past 5 years
- VAPoR 2 study evaluating the utilization of VAP bundles
- RAM cannula versus high-flow nasal cannula study
- Contributing author to AHA CPR 2015 guidelines (Resuscitation, Oct 2015)

Based on collective expertise, not only in pediatric critical care, the Division expects to apply for initial fellowship accreditation this year. Three members of the Division have dual-board certification (toxicology, palliative care and pulmonology) and a fourth member is currently pursuing a Masters in Education. The Division hopes to welcome its first pediatric critical care fellow(s) in 2017.

Aside from clinical research, members of the Division have been invited to give national and international presentations including:

- India's National Congress of Pediatric Critical Care
- International Advisory and Review Board for Journal of Pediatric Critical Care
- Society for Simulation in Healthcare's International Meeting for Simulation in Healthcare
- International Pediatric Simulation Society Symposia and Workshops
- American College of Chest Physicians Fellows Meeting
- North American Congress of Clinical Toxicology

Members of the Division have authored, or contributed to, the following educational publications:

- Pediatric Fundamental Critical Care Support Course, 2nd Ed. (Society of Critical Care)
- Current Concepts in Pediatric Critical Care (Society of Critical Care)
Pediatric Advanced Life Support (PALS) Provider and Instructor Manuals (AHA), 2010 and 2015
Pediatric Emergency Assessment, Recognition and Stabilization (PEARS) Provider and Instructor manuals (AHA), 2010 and 2015
PALS HeartCode DVD (AHA)
Toxidromes and Their Treatment, 5th Ed
Critical Care Toxicology: The Diagnosis and Management of the Critically Poisoned Patient, 2nd Ed.

Pediatric Critical Care Patient Care

Nationally, Children's PICU continues to achieve amongst the best clinical outcomes; the Division continues to have an exceptionally low standardized mortality ratio, despite having typically sicker patients than other comparably sized PICUs. In 2014, the Extracorporeal Life Support Organization (ELSO) designated Children's Extracorporeal Membranous Oxygenation (ECMO) program as a Center of Excellence for 2014-17. The vast majority of these children are cared for in the PICU through collaboration of the Division with other services, such as pediatric cardiothoracic surgery.

In addition to the high quality clinical care the Division continues to provide, the patient/parent satisfaction for the services the Division provides continues to be a high priority for the Division at both PICUs. In 2014, Children's PICU received the highest patient satisfaction award for 2013; this is amongst all in-patient units from 57 different healthcare organizations participating in Healthstream's surveys. At both institutions, each member of the Division strives not only to provide individualized and meticulous clinical care to every patient, but also actively engage and effectively communicate with every family on a daily, and sometimes hourly, basis.

As a Division, we are passionate about taking care of not only the child, but the family as well. This approach, although not unique to intensivists, is so ingrained in us that we approach every patient and family in this manner, including those patients who are actively dying. Although we try to make every child better so he or she can go home, sometimes this is not possible. Unique to the Division's daily 'job' is how often we have to deliver the worst possible news a parent can ever hear, their child is dead/dying. But, we also have multiple opportunities to tell parents that, against all odds, 'Your child is going to make it.' Pediatric Critical Care physicians are truly unique, and special, in this respect. We celebrate a family's joy when their child is able to go home. But, when their child dies in the PICU, we try to make the family's last moments with their child as painless, peaceful and comforting as possible. Many families, whose child has died, will remember us not for our efforts in trying to save their child, but for our attention to the smallest details during their child's last moments.

Pediatric Critical Care Recognition

Finally, none of the Division's successes, accomplishments and care
could occur without the exceptional and tireless efforts by all the other services, disciplines, and staff who support us in order to take care of critically ill children at both institutions. We cannot say thank you enough to:

- PICU nurses and managers
- PICU nurse educators
- Respiratory therapists
- Residents and fellows
- Physician assistants
- Advanced practice nurses
- Pharmacists and pharmacy techs
- OT/PT/Speech therapists
- Dieticians
- Departmental and institutional leadership at UNMC and Children's
- Radiology technicians
- Childcare partners
- Unit administrative and assistants
- Environmental services
- Students and trainees from all medical disciplines and departments
- Volunteers
- Members of all consulting departments, divisions and services
- Every other person who contributes to the care and support of critically ill pediatric patients.

On behalf of members of the Division, we are forever indebted to you all for providing the highest quality care and experience for the children, and families, we serve.