



SURGICAL RESIDENT CURRICULUM FOR THE DIVISION OF GENERAL and PEDIATRIC SURGERY July 2012

I. The Clinical Mission of the Division of Pediatric Surgery

The clinical mission of the Division of Pediatric Surgery at the University of North Carolina at Chapel Hill is to provide the highest level of care in infants, children and adolescents with congenital and acquired conditions that require surgery. Our goals therefore are the following:

- To apply the most up-to-date procedures in an appropriate context using solid medical and scientific information
- To care for complex congenital malformations, advanced surgical conditions, and the most complicated cases in a multidisciplinary fashion using the skills and knowledge of our medical and nursing colleagues
- To expand the sphere of care to include the community pediatrician and social care network in the home community in efforts that include education and communication
- To respect the patient and his or her family during all phases of care, including efforts to provide care in a painless, caring environment
- To promote an educational environment where decisions are informed, questions are answered, and children are treated with kindness.

Surgery residents and medical students, as members of the Division of Pediatric Surgery, will support the clinical mission and all goals of the Division.

II. Overview of the Division

The Division is a clinically busy unit that provides surgical care for patients with all six core competencies put forth by the Accreditation Council of Graduate Medical Education. These include congenital malformations of the head and neck, thorax, trachea, esophagus, lung, and gastrointestinal tract including abdominal wall defects. Specific anomalies also fall within the scope of the division, including patent ductus arteriosus and selected genitourinary malformations including undescended testes. The Division provides primary surgical care for major solid tumors of childhood,

including teratoma, neuroblastoma, Wilms' tumor, rhabdomyosarcoma, liver tumors, and lung tumors. The Division is primary surgeon for major pediatric trauma, including primary assessment and resuscitation efforts in major and multisystem injuries, and provides primary surgical care to all thoracic and abdominal injuries. Because of the unique physiology of the surgical newborn, infant, and preadolescent child, the Division provides close pre- and postoperative care to patients under its primary service and other services in critical care areas that utilize its consultative services.

The pediatric surgery faculty includes Dr. William T. Adamson, Dr. Sean E. McClean, Dr. Kimberly M. Erickson, and Dr. Timothy Weiner. Dr. Sang Lee will be joining the faculty in September, 2012. Lynne Farber PNP, Amy Lamm PNP, and Robin DeLoach PNP are advanced nurse practitioners integral to patient care and education provided by the Division.

III. The Educational Mission

A primary mission of the Division is to train general surgeons to provide a high level of pediatric surgical care appropriate to a community general surgical practice, and to prepare selected trainees for additional specialty training in pediatric surgery at a certified pediatric surgical fellowship.

Learning objectives are based upon post-graduate level and the six clinical core competencies. Each objective is graduated; i.e., each builds upon skills and attitudes learned in earlier years. Objectives reflect teamwork; i.e., the skills and responsibilities blend so that they complement contributions from other members of the physician team and recognize the input from nursing and other allied health professionals. Learning objectives for the first year on service (PGY 1) are longer and have more detail because of the many requirements for inculcation into a functioning surgical team. Many are not specific to the Division of Pediatric Surgery, however, and are reinforced in all PGY I-level rotations.

IV. Learning Objectives

A. PGY I

I. Patient Care

1. To know up-to-present details of all assigned patients.
2. To gather and interpret essential and accurate information about the patient's health status, including
 - a. Learning to obtain clinical information from children and parents
 - b. Obtaining relevant information from nurses and hospital departments (e.g., radiology, laboratory, and hospital information systems)
 - c. Obtaining information from referring pediatricians, hospitals

3. To learn the principles of pre and postoperative management, including:
 - a. Fluid and electrolyte management
 - b. Pharmacological management, including pain and sedation, antibiotic dosing and pharmacology
 - c. Recognition and management of respiratory distress and shock
 - d. Wound care
 - e. Follow-up and outpatient management, including referrals and resources for social work, rehabilitation and physical medicine
4. To perform basic clinical procedures, including:
 - a. Primary closure of incisions
 - b. Management of open and infected wounds
 - c. Venipuncture
 - d. Intravenous line placement
 - e. Placement of urinary catheters

II. Medical Knowledge

1. To expand the fund of knowledge from textbooks, journals, and electronic media.
2. To critically evaluate the literature based upon methodology and statistical techniques, a survey of related articles, and resident-initiated discussions with attending staff and other experts.
3. To participate in scheduled conferences.
4. To teach medical students.

III. Practice-based learning and improvement

1. To evaluate patients critically with the goal of coming up with a working diagnosis and treatment plan.
2. To understand the medical, surgical, and scientific bases of a patient's condition and his or her treatment plan.
3. To obtain consultations and other opinions regarding a patient's status, work-up, or hospital course when necessary.

IV. Practice-based learning and improvement

1. To present clinical information on work rounds clearly and concisely.
2. To write progress in a timely manner and with sufficient detail so that patients' condition, status and care plans are clear
3. To work effectively with attending staff, house staff colleagues in surgery and pediatric services, medical students, nurses, ancillary personnel, pre-hospital personnel.
4. To keep senior residents and attending staff informed, particularly with "problem" cases, unstable patients, and changes in-patient condition and care plan.

5. To foster teamwork and a work environment based upon communication, respect, trust, and honesty.
6. To foster a social environment based upon tolerance for other opinions, backgrounds, and cultures.

V. Professionalism

1. To demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
2. To understand when expert medical advice is necessary.
3. To obtain expert medical, nursing, or other opinions when limits of knowledge, experience, and training are reached.

VI. Systems-based practice

1. To effectively transfer care when duty hours are completed.
2. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.
3. To apply standardized care plans, and the rationale behind them, including:
 - a. Bowel preparation procedures,
 - b. Preoperative antibiotic regimens,
 - c. S.B.E. prophylaxis,
 - d. Tetanus prophylaxis,
 - e. Universal precautions,
 - f. Aseptic technique,
 - g. Care of central lines,
 - h. Care of gastrostomies, and
 - i. Postoperative feeding regimens (e.g., post-pyloric regimens).
4. To attend care conferences on assigned patients.
5. To write notes with sufficient detail to satisfy the requirements of governmental agencies, health care payer organizations, including:
 - a. Admission histories, physical examinations, and care plans,
 - b. Daily progress notes, and
 - c. Discharge summaries.

B. PGY III

I. Patient Care

1. To be available to PGY I residents and medical students so that evaluations and treatments are completed in an appropriate and timely manner.
2. To evaluate new patients and take new consultations, with the goal of identifying the major surgical problems and developing a plan for diagnosis and treatment.

3. To identify patients who are unstable, critically ill, and are developing new complications.
4. To be able to initiate treatment in the emergency room and intensive care setting.
5. To provide advanced pediatric trauma care and life support.
6. To perform basic surgical procedures under supervision, including:
 - a. Placement of chest tubes
 - b. Placement of central venous catheters
 - c. Hernia repair in older children
 - d. Gastrointestinal procedures in older children
 - e. Laparoscopic procedures in older children

II. Medical Knowledge

1. To contribute substantively in scheduled conferences.
2. To teach PGY I residents and medical students.

III. Practice-based learning and improvement

1. To contribute to work rounds so that diagnostic and treatment issues are identified and care tasks are initiated and completed in an appropriate and timely manner.
2. To provide information and resources so that the team understands the medical, surgical, and scientific bases of a patient's condition and his or her treatment plan.

IV. Interpersonal and communication skills

1. To instruct PGY I residents and medical students on presentation skills so that clinical information is clear and concise.
2. To review team orders and progress notes legibility, detail, and accuracy.
3. To provide informed opinions during consultations with other services in a thoughtful, respectful manner.
4. To advise parents and patients in the decision-making process.

V. Professionalism

1. By way of example and direct instructions to PGY I residents and medical students, to demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
2. To present deaths and complications to Morbidity and Mortality Conference on assigned patients.

VI. Systems-based practice

1. To assure that priorities of care and service duties are transferred completely and responsibly on changes in duty hours.
2. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.

3. To supervise the application of standardized care plans, and ensure that the junior residents understand the rationale behind them.
4. To identify problems and inefficiencies in the provision of patient care, and devise means of assessing and addressing them.

C. PGY V

I. Patient Care

1. To be available to residents and medical students so that evaluations, treatments, and consultations are completed in an appropriate and timely manner.
2. To take new patients and consultations, with goal of assigning team resources to address them in an appropriate and timely manner.
3. To coordinate team efforts with multiple patients present multiple problems of varying urgency.
4. To coordinate hospital and physician resources for the transfer and care of critically ill patients from other institutions.
5. To provide trauma care where more than one child is injured or admitted.
6. To perform advanced surgical procedures under supervision, including:
 - a. Thoracic procedures
 - b. Congenital gastrointestinal conditions
 - c. Resection of solid tumors
 - d. Hernia repair in infancy
 - e. Laparoscopic procedures in infants

II. Medical knowledge

1. To contribute substantively in scheduled conferences.
2. To teach residents and medical students during work rounds and under “ad hoc” situations.

III. Practice-based learning and improvement

1. To lead work rounds so that diagnostic and treatment issues are identified and care tasks are initiated and completed in an appropriate and timely manner.
2. To provide information and resources so that the team understands the medical, surgical, and scientific bases of a patient’s condition and his or her treatment plan.

IV. Interpersonal and communication skills

1. To conduct work rounds so that clinical information is clear and concise.
2. To assure that team orders and progress notes are detailed and accurate.

3. To provide informed opinions during consultations with other services in a thoughtful, respectful manner.
 4. To advise parents and patients in the decision-making process.
- V. Professionalism**
1. To obtain informed consent from parents.
 2. By way of example and direct instruction to residents and medical students, to demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
 3. To present death and complications in Morbidity and Mortality Conferences on assigned patients.
- VI. Systems-based practice**
1. To assure that priorities of care and service duties are transferred completely and responsibly on changes in duty hours.
 2. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.
 3. To assure the standardized care plans are applied, and that junior residents understand the rationale behind them.
 4. To identify problems and inefficiencies in the provision of patient care, and devise means of assessing and addressing them.

V. Didactic Curriculum

- A. Weekly Division preoperative work conference.
- B. Weekly combined prenatal conference (with Neonatology, Perinatal Medicine, High-risk Obstetrics).
- C. Pediatric trauma Morbidity and Mortality (every other month)
- D. Monthly Pediatric Chair rounds (with ward services, Department of Pediatrics).
- E. Daily medical student conference.
- F. Morbidity and Mortality Conference (with Divisions of General Surgery in the Department of Surgery).
- G. Resident-as-Teacher conference (with Department of Surgery).

VI. Apprenticeship Curriculum

- A. Preoperative and postoperative clinics.
- B. Operating room instruction.
- C. Ward work rounds.
- D. Day-to-day interactions with attending staff.
- E. Optional research, including chart reviews, database outcome studies, laboratory investigation.

VII. Evaluation

Attending staff evaluates resident performance based upon the six core competencies relevant to his or her postgraduate level summarized above. The senior residents assist in the evaluation of junior level residents. End-of-rotation faculty meetings assess in addition the strengths and weaknesses of the residents. Completed evaluation forms summarize these evaluations. Faculty and residents meet, using the evaluation form as a guide for constructive discussion. They make plans to address perceived resident weaknesses. Part of the discussion addresses the quality of the educational experience on the Pediatric Surgery service.