



SURGICAL RESIDENT CURRICULUM FOR THE DIVISION OF CARDIOTHORACIC SURGERY

Residency Years Included:

PGY1 X PGY2 X PGY3 PGY4 PGY5 Fellow

I. The Clinical Mission of the Division of Cardiothoracic Surgery

The clinical mission of the Division of Cardiothoracic Surgery at the University of North Carolina at Chapel Hill is to provide the highest level of care for patients with congenital and acquired conditions of the chest including the heart, lungs, esophagus, chest wall and associated organs and structures. Our goals therefore follow:

- To apply the most up-to-date procedures in an appropriate context using solid medical and scientific information;
- To care for complex congenital malformations, acquired 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 referring physicians 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; and
- To promote an educational environment where decisions are informed, questions are answered, and patients are treated with respect.

Surgery residents and medical students, as members of the Division of Cardiothoracic 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 and acquired diseases of the heart, thorax, trachea, esophagus, and lung. This includes the surgical

treatment of end-stage disease of the heart and lungs, including heart, lung and heart-lung transplantation and the utilization of mechanical circulatory assist devices both for temporary and permanent treatment. The Division also treats major thoracic trauma, including heart, lung, esophageal and great vessel injuries.

Last year surgeons in the Division performed more than 1,000 operative procedures. The faculty includes Drs. Thomas Egan, Richard Feins, Benjamin Haithcock, Andy Kiser, Michael Mill, Brett Sheridan and William Stansfield. The cardiothoracic surgery residents enrolled in an RRC approved Thoracic Surgery Residency are integral members of the patient care and teaching team.

III. The Educational Mission

A mission of the Division is to train general surgeons to provide a high level of surgical care appropriate to a community general surgical practice, to know when to refer patients to a certified cardiothoracic surgeon and to prepare selected trainees for additional specialty training in a certified cardiothoracic surgery residency.

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 Cardiothoracic Surgery, however, and are reinforced in all PGY I-level rotations.

IV. Learning Objectives

A. PGY I

I. Core Competency - 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 patients and family members,
 - b. Obtaining relevant information from nurses and hospital departments (e.g., radiology, laboratory, and hospital information systems),
 - c. Obtaining information from referring physicians and hospitals.
3. To learn the principles of pre and postoperative management, including:
 - a. Fluid and electrolyte management,
 - b. Management of pleural air and fluid collections,

- c. Pharmacological management, including pain and sedation, antibiotic dosing and pharmacology,
- d. Recognition and management of respiratory distress and shock,
- e. Wound care, and
- f. 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,
 - f. Performance of thoracentesis, and
 - g. Placement of chest tubes.

II. *Core Competency - 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. *Core Competency - 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. *Core Competency – Interpersonal and Communication Skills*

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

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

V. *Core Competency - 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. *Core Competency - 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 chest tubes, and
 - i. Postoperative feeding 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 II

I. *Core Competency - Patient Care*

1. To be available to PGY I residents and medical students so that treatments are supervised and completed in an appropriate and timely manner.
2. To evaluate new patients and take new consultations, with the goal of identifying the major cardiac surgical problem 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 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. Placement of Swan-Ganz catheters,
 - d. Performance of sternotomies, and
 - e. Saphenous vein harvesting.

II. *Core Competency - Medical Knowledge*

1. To contribute substantively in scheduled conferences.
2. To teach medical students.

III. *Core Competency - 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. *Core Competency - Interpersonal and communication skills*

1. To instruct medical students on presentation skills so that clinical information is clear and concise.
2. To document team orders and progress notes in a legible, detailed and accurate manner.
3. To provide informed opinions during consultations with other services in a thoughtful, respectful manner.
4. To advise patients and families in the decision-making process.

V. *Core Competency - Professionalism*

1. By way of example and direct instructions to medical students, 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. *Core Competency - 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.
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 conference.
- B. Weekly combined Pediatric Cardiology and Cardiothoracic Surgery conference.
- C. Weekly Cardiac Catheterization Conference (with Cardiology).
- D. Weekly Multidisciplinary Thoracic Oncology Conference.
- E. Daily medical student conference as assigned.
- F. Monthly Morbidity and Mortality Conference.
- G. Monthly Cardiothoracic Surgery Didactic Curriculum Conference.

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 cardiothoracic surgery residents assist in the evaluation of general surgery residents. Completed evaluation forms summarize these evaluations and are forwarded to the Department of Surgery.