



SURGICAL RESIDENT CURRICULUM
FOR NORTH CAROLINA JAYCEE BURN CENTER
2009

Residency years included:

PGY1 X PGY2 PGY3 X PGY4 PGY5 Fellow

I. Clinical Mission of the North Carolina Jaycee Burn Center

The clinical mission of the North Carolina Jaycee Burn Center at the University of North Carolina at Chapel Hill is to provide the highest level of care to patients of all ages with skin trauma or skin diseases. 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 thermal and electrical injuries, 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 nurses 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 comfortable, caring environment; and
- To promote an educational environment where decisions are informed, questions are answered, and patients are treated with kindness.

Surgery residents and medical students, as members of the North Carolina Jaycee Burn Center, will support the clinical mission and all goals of the Division.

II. Overview of North Carolina Jaycee Burn Center

The North Carolina Jaycee Burn Center is a clinically busy unit that provides surgical care for patients with thermal, electric and chemical skin disorders and soft tissue infections. The North Carolina Jaycee Burn Center cares for patients of all ages, and provides the full range of intensity of care from initial resuscitation through rehabilitation. Over 600 patients are admitted each year for acute and reconstructive care. The faculty of the Division includes Drs. Bruce Cairns, Samuel Jones, Scott Hultman, and Anthony Meyer. A burn fellow may also participate in resident education.

Surgery resident education is a specific aim of the North Carolina Jaycee Burn Center. Each rotation currently includes residents from postgraduate years (PGY) I and III. This team of residents works cooperatively to provide preoperative, intraoperative, and postoperative care to the patient recovering from burn injuries. For the junior resident, special emphasis is placed on preoperative and postoperative management. Senior residents assist with the instruction of the junior residents and focus on the intraoperative care of the surgical patient. The primary goal of instruction is to nurture the development of each surgical resident such that he/she can function at a high level of competence as a general surgeon. Although the clinical focus of the service thermal trauma, the ultimate goal of resident training is to train residents to function independently as a general surgeon within the framework of the clinic and hospital setting. Each resident must know and understand the six core competencies put forth by the Accreditation Council of Graduate Medical Education. The learning environment in the North Carolina Jaycee Burn Center will stress these core competencies and resident evaluation will be based on these principles.

III. Core Competencies

- A. Patient care.
- B. Medical knowledge
- C. Practice-based learning and improvement.
- D. Interpersonal and communication skills.
- E. Professionalism.
- F. System-based practice.

IV. Learning Objectives

Overview: The emphasis of this rotation is on the acute care of the burn patient. This includes initial assessment following injury, stabilization and resuscitation, pre-operative evaluation, intra-operative management, postoperative care, and outpatient followup.

A primary mission of the North Carolina Jaycee Burn Center is to train general surgeons to provide a high level of burn surgical care appropriate to a community general surgical practice, and to prepare selected trainees for additional specialty training in burn surgery at a burn 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 I) are longer and have more detail because of the many requirements for inculcation into a functioning surgical team. Many are not specific to the North Carolina Jaycee Burn Center, however, and are reinforced in all PGY I- levels rotations.

PGY-I

1. Patient Care

- a. Evaluate patients with small to moderate sized burns, including assessment for the need for hospitalization, as well as immediate resuscitation needs. The PGY-1 should be able to communicate this assessment to the PGY-3 (chief resident) or to the attending or both.
- b. The PGY-1 is expected to round on a daily basis on all hospitalized patients, performing a complete physical examination, acquiring an update on pertinent laboratory and radiological examinations, and compiling this information into a concise presentation to be made on morning rounds.
- c. The PGY-1 should be able to evaluate the burn patient for needs related to fluid and electrolyte management, assessment and treatment of pain and anxiety, and appropriate supplementation for nutritional needs.
- d. To be able to initiate treatment in the emergency room and intensive care setting.
- e. To provide advanced trauma care and life support.
- f. The PGY-1 is expected to be present in the operating room from the beginning to the end of the case, unless released by the attending. Participation in the case will include making and applying burn dressings, harvesting skin for autografting, meshing both auto and homograft, preparing the wound bed for grafting, and applying the skin grafts to the wound bed.
- g. The PGY-1 should be able to recognize the need for assessment of the burn patient for infections, should be able to follow an algorithm for diagnosing the source of infection, and initiating a treatment plan that includes appropriate antibiotics.
- h. The PGY-1 is expected to become proficient at arterial and venous catheterization in the burn intensive care unit, including placement of percutaneous arterial lines (including PiCCO catheters), placement of percutaneous femoral venous lines, and placement of peripheral intravenous lines. Under supervision of the PGY-3, the PGY-1 is also expected to become proficient in placement of subclavian and internal jugular venous lines. Tube

thoracostomies and pulmonary artery catheterizations will also be done under the supervision of PGY-3s.

- i. The PGY-1 will be expected to assess the patient for nutritional status. This will include assessing the extent of the patient's weight loss, tracking the weekly serum proteins levels, following the dietitian's notes in the chart, and determining the appropriate timing for metabolic cart studies. The PGY-1 will also be expected to understand the rationale for the enteral feedings employed in the support of the burn patient.
- j. The PGY-1 will be expected to assess the patient initially for need for intubation, either because of smoke inhalation injury, swelling of the upper airway, or carbon monoxide poisoning. During the subsequent hospitalization, the PGY-1 will also be expected to master management of the ventilator, as well as to prepare the patient for weaning and extubation.
- k. The PGY-1 will be expected to anticipate and identify the patient going into septic shock. Subsequently the PGY-1 will be expected to manage the fluid resuscitation of the patient, as well as work with the PGY-3 in terms of managing inotropic support.

2. Medical knowledge

- a. The PGY-1 is expected to read a comprehensive chapter on burn care and one of the major textbooks on surgery.
- b. To contribute substantively in scheduled conferences.
- c. To teach medical students.

3. Practice-based learning and improvement

- a. 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.
- b. 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.

4. Interpersonal and communication skills

- a. The PGY-1 should understand that his or her primary role is to gather information for the PGY-3 and attendings to make informed decisions about treatment plans, as well as to carry out those treatment plans.
- b. The PGY-1 is expected to document fully the patient's hospital course, including a precise history and physical, comprehensive discharge summary and daily progress notes.
- c. To instruct medical students on presentation skills so that clinical information is clear and concise.
- d. To review team orders and progress notes for legibility, detail, and accuracy.

- e. To provide informed opinions during consultations with other services in a thoughtful, respectful manner.
- f. To advise patients and family members in the decision-making process.

5. *Professionalism*

- a. The PGY-1 is expected to fully participate in all OR cases, or in clinic, or in ICU management on a day to day basis.
- b. By way of example and direct instruction to medical students, to demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
- c. To obtain informed consent from patients or family members.
- d. The PGY-1 is expected to present in the burn center at all times, as much as possible, during those periods when he or she is on call.

6. *Systems-based practice*

- a. To assure that priorities of care and service duties are transferred completely and responsibly on changes in duty hours.
- b. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.
- c. To supervise the application of standardized care plans, and that other residents understand the rationale behind them.
- d. To identify problems and inefficiencies in the provision of patient care, and devise means of assessing and addressing them.

PGY-3

1. *Patient Care*

- a. To be available to PGY I residents and medical students so that evaluations and treatments are completed in an appropriate and timely manner.
- b. To evaluate new patients and take new consultations, with the goal of identifying the major surgical problem and developing a plan for diagnosis and treatment.
- c. To identify patients who are unstable, critically ill, and are developing new complications.
- d. To be able to initiate treatment in the emergency room and intensive care setting.
- e. To provide advanced trauma care and life support.
- f. To perform basic surgical procedures under supervision, including:
 - a. excision of burns,
 - b. placement of skin grafts,
 - c. placement of lines, including
 - i. central venous lines

- ii. arterial lines
- iii. pulmonary artery catheters
- iv. PiCCO catheters
- d. performance of tube thoracostomies
- e. under supervision, percutaneous gastrostomies and tracheostomies.
- g. To coordinate team efforts when multiple patients present multiple problems of varying urgency.
- h. To coordinate hospital and physicians resources for the transfer and care of critically ill patients from other institutions.

2. Medical knowledge

- a. To contribute substantively in scheduled conferences.
- b. To teach PGY I residents and medical students.

3. Practice-based learning and improvement

- a. 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.
- b. 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.

4. Interpersonal and communication skills

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

5. Professionalism

- a. By way of example and direct instruction to PGYI residents and medical students, to demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
- b. To present deaths and complications in Morbidity and Mortality Conferences on assigned patients.
- c. To obtain informed consent from patients or family members.

6. Systems-based practice

- a. To assure that priorities of care and service duties are transferred completely and responsibly on changes in duty hours.
- b. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.
- c. To supervise the application of standardized care plans, and that junior residents understand the rationale behind them.
- d. To identify problems and inefficiencies in the provision of patient care, and devise means of assessing and addressing them.

V. *Didactic curriculum*

- A. Weekly Interdisciplinary Team Conference.
- B. Morbidity and Mortality Conference.
- C. Department of Surgery Grand Rounds.
- D. Resident topic conference.
- E. Life after residency course.
- F. Resident as teacher conference.

VI. *Apprenticeship Curriculum*

Residents learn directly from faculty by participating in patient care activities.

- A. Out-patient clinics.
- B. Operating room instruction.
- C. Intensive care unit responsibilities.
- D. Step-down/ floor units responsibilities.
- E. Ad hoc tutorial sessions.
- F. Morning rounds.
- G. Communication with referring doctors.

VII. *Evaluation*

Residents are evaluated by the faculty. The senior residents participate in the evaluation of the junior residents. End-of -the- rotation faculty meetings assess the strengths and weaknesses of the residents. Evaluation forms are completed and the residents are encouraged to meet with the faculty at the conclusion of the rotation. Feedback is distributed during the rotation such that residents can address deficiencies. The faculty takes into account patient care, operative techniques, attitude and communication with others. The opinions of paramedical personnel, patients, families and others are considered during the evaluation process. The residents are encouraged to provide feedback to the faculty regarding the strengths and weakness of the surgical experience at the North Carolina Jaycee Burn Center.