

DESCRIPTION OF THE FELLOWSHIP PROGRAM

Prerequisite:

Applicants must have completed a 5 year accredited residency in general surgery.

or

Applicants must have completed a residency in general surgery with an accredited fellowship in plastic surgery.

or

Applicants must have completed an accredited integrated plastic surgery residency with at least 3 years of general surgery training.

*** Applicants with a background in an integrated plastic surgery residency may participate in the ACGME-accredited (first year) Critical Care training through the department of Anesthesia followed by the '2nd year' Burn Fellowship and would not be able to participate in Trauma and Emergency General Surgery Call.

Depending on the Track, Fellows will attain knowledge and expertise to:

- 1) Obtain a Certificate of Added Qualifications in Burn Surgery
- 2) Satisfy the six core competencies outlined by the ACGME
- 3) Obtain an American Board of Surgery Certificate of Added Qualifications in Surgical Critical Care
- 4) Obtain an AAST Certificate of Added Qualifications in Acute Care Surgery
- 5) Be clinically proficient to manage the most complex and critically ill burn, trauma and emergency general surgery patients
- 6) Be clinically proficient in complex burn patients including acute care, surgical and wound management as well as scar and reconstructive procedures.
- 7) Direct and manage a clinical burn service and regional program

- 8) Be leaders administratively and academically in the fields of Burns and Acute Care Surgery

CLINICAL EXPERIENCE:

Burn Critical Care

The clinical aspects of the burn fellowship include the critical care specific issues that are unique to burn patients. These include:

- resuscitation strategies
- evaluation and treatment of inhalation injuries,
- evaluation and treatment of burn wound sepsis,
- evaluation and treatment of hospital acquired and ventilator-associated pneumonias
- management of poly-traumatized burn patients (trauma patients with thermal, electrical, or chemical injuries),
- management of comorbidities and pre-existing medical conditions in the setting of large volume fluid resuscitation
- ICU procedural skills including escharotomy, fasciotomy, bronchoscopy, grading of inhalation injury, tracheostomy and vascular access.

Operative Management

The operative management involves acquiring knowledge and skills of burn excision techniques tangential, fascial and VersaJet. Understanding how to obtain a healthy wound bed and prepare it to accept a graft. Learning a variety of grafting options split thickness vs. full thickness, when to use skin substitutes, biologic dressings and the pros and cons to the various types of wound care. How to approach hands and face grafts, skin expanders and rotational flaps as well as scar revision and burn reconstruction.

Outpatient Management and Reconstruction

The clinical aspects of burn care do not end when the patient is discharged, knowledge of appropriate wound care, scar management, pain, pruritus and neuropathies in healed tissue as well as in grafts. The integrated use of compression garments, silicone, Kenalog injections, laser therapy for scar management are an important part of care after initial recovery. Without appropriate scar management, function loss and psychological issues prevent patients from achieving a functional outcome. Knowledge of how and when to implement splints and casts for joint contractures which leads to loss of function may continue for years after the burn has healed. Appropriate timing and intervention for burn scar reconstruction will be taught through

time spent in the outpatient clinic. The outpatient management issues will be learned through participation in the fellow and attending's clinic.

RESEARCH

A research topic will be developed and submitted for presentation at the American Burn Association annual meeting. Along with burn research; over the 2 years submission to one of the Surgical, Trauma or Critical care annual meetings will be expected. This topic will be initiated by the fellow and supported by a designated mentor with knowledge of the research topic.

ADMINISTRATIVE

In a graded fashion the fellow will become increasingly involved in running the burn service. This includes directing Burn ICU rounds and overseeing resident directed rounds on the entire burn service. Attendance and involvement in interdisciplinary meetings, quality assurance meetings and critical care fellow educational conferences, journal clubs, morbidity, mortality and improvement conferences is expected.

EDUCATIONAL

The Literature

Along with a curriculum of readings and burn care journal articles, self-directed learning of current changes in burn care through journals will be expected. A working knowledge of the current research and literature in burn care will be gained as well as a historical perspective of the major advances in burn care.

Teaching

Teaching of the residents and medical students about burn care, these include technical skills of excision and grafting, wound care, ICU procedures, management of inhalation injury, resuscitation in pediatrics and adults, nutrition, SIRS and hypermetabolism, ventilator management, burn sepsis, pain management and ICU delirium, ECMO etc.

The fellow will present relevant topics at journal club and fellows conference.

The fellow will obtain ATLS and ABLIS instructor certification to help educate pre-hospital and referring hospital clinicians in trauma and burn care.

PROFESSIONAL DEVELOPMENT

Mentorship and guidance will be regularly provided to help training fellows achieve their professional and lifetime goals. Furthermore we will provide tools for ongoing development to help maintain professional satisfaction in a changing medical landscape.

STRUCTURE OF THE FELLOWSHIP

1st Year Surgical Critical Care

During the first year of the Burn and Critical Care Fellowship, the fellow will participate in an ACGME approved Surgical Critical Care Fellowship with a long history of excellence in training. . This integrated program is summarized here but details of the Surgical Critical Care and Acute Care Fellowship program are outlined in greater detail at the following link:

<https://medschool.vanderbilt.edu/trauma-and-scc/surgical-critical-care-acute-care-surgery-and-burn-fellowship-programs>.

Fellows will assume responsibility for overseeing the care of critically ill patients in various ICU's in one month block rotations. Fellows will undergo 12 rotations with 10 of these rotations in intensive care units and 2 months of elective rotations. Core intensive care units include the burn, trauma, cardiovascular and surgical ICUs plus a VA SICU rotation. Additional rotations in the pediatric ICU, neurologic ICU, and medical ICU are optional at the Fellow's discretion. The Surgical Critical Care Fellows interface significantly with the Anesthesia Critical Care Fellowship in educational activities but are never assigned to the same rotations.

Dr. Addison May is the Program Director for the Vanderbilt Surgical Critical Care and Acute Care Surgery Fellowship and in collaboration with the Program Director of the Burn Fellowship (Dr. Lisa Rae) will direct the combined, integrated experience.

Expectations, Responsibilities and Experience of 1st year:

The Fellow will take a lead role in the care and resuscitation of acutely ill and injured patients. The primary "daytime" responsibilities include participation in daily ICU rounds and direction of the care of patients within the unit to which you are assigned for the month. Fellows should have reviewed and be knowledgeable of the management guidelines, policies, and operating procedures of each core ICU prior to beginning each rotation. The fellow will interface with the house staff and faculty during the clinical care of these patients.

The rotation schedule:

Each of the Critical Care Fellows will have the following rotations during the first year

- SICU – 1- 2 months
- TICU – 2 months
- BICU – 2 months
- VA SICU – 1 month
- CV ICU – 1 month
- Night ICU – 3 months

2 Electives months – It is suggested that one of these months are Pediatric ICU and the other an operative burn surgery month.

****Fellows are discouraged from taking vacation during the months they are covering SICU days, SICU nights, and CVICU****

Fellow's will take call in-house on night shift and provide senior level supervision for the trauma, burn, and surgical ICUs and act in concert with the in-house surgical critical care faculty.

The VUMC Critical Care Fellowship complies with all ACGME regulations regarding work hours.

In addition, fellows will gain the skills and judgment to implement and supervise invasive procedures according to institutional and service specific performance standards and guidelines.

These procedures include the following:

1. Central lines, arterial lines, Pulmonary Artery catheters
2. Bronchoscopy and bronchoalveolar lavage
3. Percutaneous tracheostomies
4. Percutaneous Endoscopic Gastrostomy tube placement
5. Chest tube placement
6. Airway management, endotracheal and surgical
7. IVC filter placement
8. Bedside laparotomy
9. Bedside Echocardiogram
10. Ultrasound evaluation of fluid status in the critically ill patient and FAST exam.

2nd Year Burn Fellowship

During the second year, after an initial period of in-depth supervised experience, the fellow will undergo a graded increase in responsibility to the level of junior faculty in burn surgery including; burn ICU, trauma and emergency general surgery. The fellow will have a faculty appointment and as an Instructor, be credentialed as a member of the medical staff with full admitting and operating room privileges. This integrated experience in burn, trauma, emergency general surgery, and critical care over 2 years enables an in-depth understanding of the pathophysiology and management of acutely injured or critically ill surgical patients, principles of resuscitation, timing of operative intervention, critical care management, and the systems and resources required for high level care and assures that graduates can perform at high levels, independent of supervision.

Dr. Lisa Rae is the Program Director for the Burn Fellowship and, in collaboration with the Program Director for the Acute Care Surgery Fellowship, will direct the Burn fellowship year.

Expectations, Responsibilities and Experience of 2nd year

Administration and Direction of Burn ICU and Care of Critically Burned patients:

To assure the acquisition of skills to independently direct the burn ICU, the fellow will take call one week/month as the Burn ICU rounding attending with graded supervision to independence from the fellowship director. The fellow will be available from home 24 hours/day during this week. He/she will be responsible for coming in for new ICU admissions to guide resuscitation and any needed emergent procedures. The fellow will be responsible for all clinical decisions and care and for documentation for clarity and billing. As the ICU attending he/she will perform and teach to residents all Burn ICU procedures and clinical decision making rationale.

These procedures may include but are not limited to the following:

1. Sedation for procedures
2. Wound debridement in hydrotherapy
3. Escharotomies
4. Fasciotomies
5. Bronchoscopy and bronchoalveolar lavage
6. Tracheostomies
7. Central venous and arterial access
8. Ultrasound and Echocardiograms and any other ICU procedures.

The fellow will be responsible for overseeing the ICU residents' curriculum during the week of BICU service and teaching the residents and ICU Fellow (anesthesia or surgical critical care) on rounds and Burn ICU specific topics.

Systems management of complex burn wounds:

To attain independent skills the fellow is responsible for daily rounds of BICU and Floor patients, allowing the 2nd year resident to run rounds with fellow oversight.

The fellow will be available to see wound care daily in Hydrotherapy or at the bedside of any patients who need evaluation for surgery, assessment of healing, changes in wound care, or staged surgeries or surgical planning.

Administration of Outpatient and followup burn management:

Fellow Burn Clinic will take place (1/2 day)/week (or more i.e., NP clinic oversight when on Burn Call) to see new patients or operative patients in follow up. During clinic the fellow will follow up outpatients with wound care for infection or need for operative intervention, late complications of scar formation, or contracture needing revision, splinting, PT/OT needs, compression garments or scar management.

The fellow will be available for clinic with Dr. Summitt/Dr. Rae for education and increased autonomy and responsibility in his/her own clinic.

Complex wound coverage techniques:

Daily as the schedule allows the fellow will go to the OR with Burns and become proficient in excision and grafting. Multistage operative planning, the use of biologic or synthetic dermal substitutes, early excision and when this is appropriate versus waiting and wound care. The fellow will participate and become proficient in select plastic surgical cases within the realm of burn surgical practice (Tissue expanders, Z-plasty, Y-V plasty, rotational flaps, etc...).

The fellow will take 'Call' along with the burn/plastics surgical faculty. This is 'home call' for new admissions, receiving and directing patients being transferred in from surrounding hospitals, back-up and oversight of the residents on call and availability for help in the Nurse Practitioner's Burn clinics.

Participate in Trauma/EGS Call (2nd year call schedule), this may include 3-6 months of time on Trauma/Emergency General Surgery covering both days/night call schedules.

Research project: abstract for the American Burn Association annual meeting in March.

Deadline for abstract submission is in September, presentation/participation at the ABA annual

meeting. Submission to a surgical, critical care or trauma meeting during the 2 year fellowship is expected.

Conferences:

- Journal Club (attend and contribute Burn related articles)
- Combined SCC conference (attend and contribute Burn related topics)
- Trauma Conference
- Grand Rounds
- M&M
- Burn interdisciplinary rounds
- Burn Quality Assurance meeting
- Trauma Faculty Meeting

Two Year Burn and Acute Care Surgical Fellowship

Fellows will spend a minimum of 26 weeks during the two years exclusively caring and operating on burn patients. This will be structured in a manner to ensure continuity of care. The remainder of the fellowship will be spent satisfying critical care requirements and being the attending (with faculty back up) on the trauma and/or emergency general surgery fellowship. In addition, the second year fellow will have dedicated administrative time.