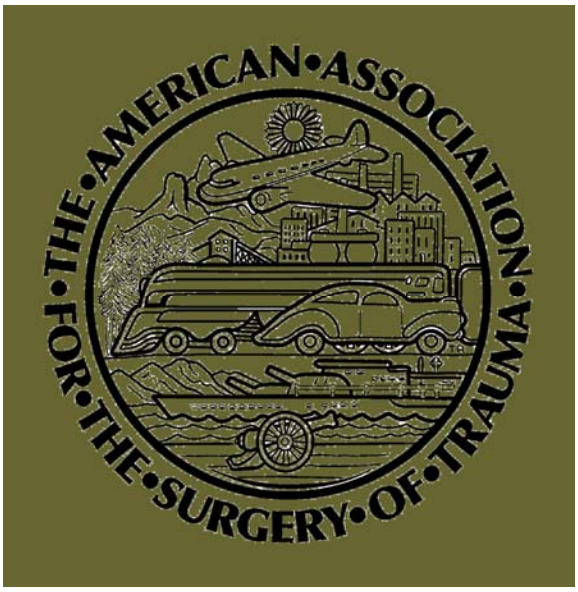

PROGRAM REQUIREMENTS FOR GRADUATE MEDICAL EDUCATION IN ACUTE CARE SURGERY

Sponsored by:

American Association for the Surgery of Trauma (AAST)

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The Program Requirements were approved at the AAST Board of Managers meeting on March 30, 2007. These requirements are not intended to replace the professional judgment and ethics of the practicing or instructing surgeon.

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I. Introduction

Duration and Scope of Training

Institutions offering fellowships in Acute Care Surgery must provide the necessary education to qualify the fellow as an acute care surgical specialist in the care of patients, in teaching, and in research. Surgeons admitted to each fellowship are required to have completed the core training requirements of an RRC-approved residency in General Surgery. Thus, the fellows should already have developed a satisfactory level of clinical maturity, technical skills and surgical judgment that will enable them to begin a fellowship in the specialty surgical field of Acute Care Surgery. The period of training must be two years and the program must comply with the institutional requirement for residency training. The key components of this training are to include trauma surgery, surgical critical care, and emergency general surgery.

II. Institutional Support

A. Sponsoring Institution

One sponsoring institution must assume ultimate responsibility for the program, as described in the Institutional Requirements, and this responsibility extends to resident assignments at all participating institutions.

B. Participating Institutions

1. Assignment to an institution must be based on a clear educational rationale, integral to the program curriculum, with clearly stated activities and objectives and should provide resources not otherwise available to the program. When multiple participating institutions are used, there should be assurance of the continuity of the education experience.

2. Assignment to a participating institution requires a letter of agreement with the sponsoring institution that provides an educational experience for a resident that is one month in duration or longer. In instances where two or more participating institutions in the program function as a single unit under the authority of the program director, letters are not necessary. Such a letter of agreement should:

    a. Identify the faculty who will assume both educational and supervisory responsibilities for residents;

    b. Specify their responsibilities for teaching, supervision, and formal evaluation of residents, as specified later in this document per sections III.B. and VII.A. of the Program Requirements;

    c. Specify the duration and content of the educational experience; and

    d. State the policies and procedures that will govern resident education during the assignment.

3. Assignments at participating institutions must be of sufficient length to ensure a quality educational experience and should provide sufficient opportunity for continuity of care. Although the number of participating institutions may vary with the various specialties' needs, all participating institutions must demonstrate the ability to promote the program goals and educational and peer activities. Exceptions must be justified and pre-approved.

III. Program Personnel and Resources

A. Program Director

1. There must be a single program director responsible for the program. The person designated with this authority is accountable for the operation of the program and should be a member of the staff of the sponsoring or integrated institution.

2. The program director, together with the faculty, is responsible for the general administration of the program, and for the establishment and maintenance of a stable educational environment. Adequate lengths of appointment for both the program director and faculty are essential to maintaining such an appropriate continuity of leadership. There should be a minimum of two staff members, including the program director.

3. Qualifications of the program director are as follows:

   a. The program director must possess the requisite specialty expertise, as well as documented educational and administrative abilities.

   b. The program director must be certified in General Surgery and Surgical Critical Care by the American Board of Surgery.

   c. The program director must be appointed in good standing and based at the primary teaching site.

4. Responsibilities of the program director are as follows:

   a. The program director must oversee and organize the activities of the educational program in all institutions that participate in the program. This includes selecting and supervising the faculty and other program personnel at each participating institution, appointing a local site director, and monitoring appropriate resident supervision at all participating institutions.

   b. The program director is responsible for preparing an accurate statistical and narrative description of the program as requested by the site selection committee of the American Association for the Surgery of Trauma (AAST), as well as updating annually both program and resident records through the ACGME's Accreditation Data System, or a similar data system as requested by the AAST.

c. The program director must ensure the implementation of fair policies, grievance procedures, and due process, as established by the sponsoring institution and in compliance with the Institutional Requirements.

d. The program director must seek the prior approval of the AAST for any changes in the program that may significantly alter the educational experience of the residents. Such changes, for example, include:

i. The addition or deletion of a participating institution;

ii. A change in the format of the educational program;

iii. A change in the approved fellow complement.

On review of a proposal for any such major change in a program, the AAST may determine that a site visit is necessary.

B. Faculty

1. At each participating institution, there must be a sufficient number of faculty with documented qualifications to instruct and supervise adequately all fellows in the program.

2. The faculty, furthermore, must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities. They must demonstrate a strong interest in the education of fellows, and must support the goals and objectives of the Acute Care Surgery fellowship.

3. Qualifications of the physician faculty are as follows:

a. The physician faculty must possess the requisite specialty expertise and competence in clinical care and teaching abilities, as well as, documented educational and administrative abilities and experience in their field.

b. The physician faculty must be certified in the specialty by the American Board of Surgery, or possess qualifications judged to be acceptable by the AAST.

c. The physician faculty must be appointed in good standing to the staff of an institution participating in the program.

4. The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, and an active research component must be included in each program. Scholarship is defined as the following:

   a. The scholarship of discovery, as evidenced by peer-reviewed funding or by publication of original research in a peer-reviewed journal;

   b. The scholarship of dissemination, as evidenced by review articles or chapters in textbooks;

   c. The scholarship of application, as evidenced by the publication or presentation of, for example, case reports or clinical series at local, regional, or national professional and scientific society meetings.

      Complementary to the above scholarship is the regular participation of the teaching staff in clinical discussions, rounds, journal clubs, and research conferences in a manner that promotes a spirit of inquiry and scholarship (e.g., the offering of guidance and technical support for residents involved in research such as research design and statistical analysis); and the provision of support for resident's participation, as appropriate, in scholarly activities.

5. Qualifications of the non-physician faculty are as follows:

   a. Non-physician faculty must be appropriately qualified in their field.

   b. Non-physician faculty must possess appropriate institutional appointments.

C. Other Program Personnel

Additional necessary professional, technical, and clerical personnel must be provided to support the program.

D. Facilities and Resources

The program must ensure that adequate resources (e.g., sufficient laboratory space and equipment, computer and statistical consultation services) are available.

1. Fellows must have ready access to a major medical library either at the institution where the fellows are located or through arrangement with convenient nearby institutions.

2. Library services should include the electronic retrieval of information from medical databases.

3. There must be access to an on-site library or to a collection of appropriate texts and journals in each institution participating in the fellowship program. On-site libraries and/or collections of texts and journals must be readily available during nights and weekends.

IV. Fellow Appointments

A. Eligibility Criteria

The program director must comply with the criteria for fellow eligibility as specified in the Institutional Requirements.

B. Number of Fellows

The AAST will approve the number of fellows based upon established criteria that include the adequacy of resources for fellow education (e.g., the quality and volume of patients and related clinical material available for education), faculty-resident ratio, institutional support, and the quality of faculty teaching.

C. Fellow Transfers

To determine the appropriate level of education for fellows who are transferring from another residency program, the program director must receive written verification of previous educational experience and a statement regarding the performance evaluation of the transferring resident prior to their acceptance into the program. A program director is required to provide verification of residency education for residents who may leave the program prior to completion of their education.

D. Appointment of Fellows and Other Students

The appointment of AAST Acute Care Surgery fellows must not dilute nor detract from the educational opportunities available to Surgery RRC-approved General residents.

V. Program Curriculum

A. Program Design

1. Format

The program design and sequencing of educational experiences will be approved by the AAST as part of the review process.

2. Goals and Objectives

The program must possess a written statement that outlines its educational goals with respect to the knowledge, skills, and other attributes of fellows for each major assignment and for each year of the program. This statement must be distributed to residents and faculty, and must be reviewed with residents prior to their assignments.

B. Curriculum Design

The program must possess a well-organized and effective curriculum, both didactic and clinical. The curriculum must provide fellows with direct experience in progressive responsibility for patient management. The content of this curriculum must be consistent with the Acute Care Surgery curriculum defined by the American Association for the Surgery of Trauma (AAST). It is the responsibility of the program to meet the major goals and educational opportunities outlined by this curriculum. The program has the responsibility to present a detailed plan for curricular activities, including clinical rotations, didactic teaching, reading assignments, and competency in technical procedures.

C. Fellows Scholarly Activities

Each program must provide an opportunity for fellows to participate in research or other scholarly activities, and residents must participate actively in such scholarly activities.

D. ACGME Core Competencies

The fellowship program must require its fellows to obtain competence in the six areas listed below to the level expected of a new practitioner. Programs must define the specific knowledge, skills, behaviors, and attitudes required, in keeping with the AAST Acute Care Surgery Curriculum outline, and provide educational experiences as needed in order for their fellows to demonstrate the following:

1. *Patient care* that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health;

2. *Medical Knowledge* about established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patient care;

3. *Practice-based learning and improvement* that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care;

4. *Interpersonal and communication skills* that result in the effective exchange of information and collaboration with patients, their families, and other health professionals;

5. *Professionalism,* as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds;

6. *Systems-based practice,* as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

E. Didactic Components

1. Fellows in Acute Care Surgery should be given the opportunity to obtain sufficient knowledge of those aspects of trauma, critical care, and emergency surgery to develop overall competence as a specialist. Such training is best accomplished in cooperation with all clinical departments.

2. Teaching contributes to the educational process, and therefore should be a regular part of the training program. The fellow should assist when possible in the instruction of general surgical residents, and medical students, as well as nurses, and other allied health professionals. It is important to include instruction in trauma system design, disaster management, surgical critical care, and recognition and management of surgical emergencies.

F. Clinical Components

1. The program should supply the necessary volume and variety of trauma, critical care, and emergency general surgery to assure adequate training of fellows. If there is insufficient volume or variety

in the primary institutions, arrangements should be made for an affiliation with a participating institution to correct the inadequacy.

2. Each fellow must have ample opportunity and responsibility for the care of patients with acute surgical problems, and the operative experience consistent with developing competency in technical skills and procedures required to provide acute surgical care.

3. Elective general surgery is an essential component of the training of Acute Care Surgeons.

4. Emergency surgical call and trauma call are mandatory components of the training curriculum.

5. Elective operative experience in thoracic, vascular, and complex hepatobiliary and pancreatic procedures are encouraged as a means of developing competency in the management of acute surgical emergencies in these anatomic regions.

6. Experience in the diagnosis, management and operative treatment of neurosurgical and orthopedic injuries are encouraged.

7. Experience with the use of interventional radiology techniques is encouraged.

8. Experience and competency with diagnostic upper and lower GI endoscopy and bronchoscopy are mandatory components of the curriculum.

9. Further details of the clinical components are given in the Appendix.

VI. Resident Duty Hours and the Working Environment

Providing fellows with a sound didactic and clinical education must be carefully planned and balanced with concerns for patient safety and fellow well-being. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on fellows to fulfill service obligations. Didactic and clinical education must have priority in the allotment of fellow's time and energy. Duty hour assignments must recognize that faculty and trainees collectively have responsibility for the safety and welfare of patients.

A. Supervision of Fellows

1. All patient care must be supervised by faculty credentialed by the hospital. The program director must ensure, direct, and document adequate supervision of fellows at all times. Fellows must be provided with rapid, reliable systems for communicating with supervising faculty.

2. Faculty schedules must be structured to provide fellows with continuous supervision and consultation.

3. Faculty and trainees must be educated to recognize the signs of fatigue, and adopt and apply policies to prevent and counteract its potential negative effects.

B. Duty Hours

1. Duty hours are defined as all clinical and academic activities related to the fellowship program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

2. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.

3. Fellows must be provided with one (1) day in seven (7) free from all educational and clinical responsibilities averaged over a four-week period, inclusive of call. *One day* is defined as one (1) continuous 24-hour period free from all clinical, educational, and administrative duties.

4. Adequate time for rest and personal activities must be provided. This should consist of a ten-hour time period provided between all daily duty periods and after in-house call.

C. On-Call Activities

The objective of on-call activities is to provide fellows with continuity of patient care experiences throughout a 24-hour period. *In-house call* is defined as those duty hours beyond the normal work day, when residents are required to be immediately available in the assigned institution.

1. In-house call must occur no more frequently than every third night, averaged over a four-week period.

2. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to six (6) additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

3. No new patients may be accepted after 24 hours of continuous duty.

4. *At-home call* (or *pager call*) is defined as a call taken from outside the assigned institution.

    a. The frequency of at-home call is not subject to the every-third-night limitation. At-home call, however, must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with one (1) day in seven (7) completely free from all educational and clinical responsibilities averaged over a four-week period.

    b. When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.

    c. The program director and the faculty must monitor the demands of at-home call in their programs, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

D. Moonlighting

1. Because residency education is a full-time endeavor, the program director must ensure that moonlighting does not interfere with the ability of the resident to achieve the goals and objectives of the educational program.

2. The program director must comply with the sponsoring institution's written policies and procedures regarding moonlighting, in compliance with the ACGME Institutional Requirements.

3. Any hours a resident works for compensation at the sponsoring institution or any of the sponsor's primary clinical sites must be considered part of the 80-hour weekly limit on duty hours. This refers to the practice of *internal moonlighting.*

E. Oversight

1. Each program must have written policies and procedures consistent with the Institutional and Program Requirements for resident duty hours and the working environment. These policies must be distributed to the residents and the faculty. Duty hours must be monitored with a frequency sufficient to ensure an appropriate balance between education and service.

2. Back-up support systems must be provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create resident fatigue sufficient to jeopardize patient care.

F. Duty Hours Exceptions

A RRC may grant exceptions for up to 10% of the 80-hour limit to individual programs based on a sound educational rationale. Prior permission of the institution's GMEC, however, is required.

VII. Evaluation

A. Fellow

Formative Evaluation

The faculty must evaluate in a timely manner the fellows whom they supervise. In addition, the residency program must demonstrate that it has an effective mechanism for assessing resident performance throughout the program, and for utilizing the results to improve resident performance.

1. Assessment should include the use of methods that produce an accurate assessment of residents' competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.

2. Assessment should include the regular and timely performance feedback to residents that includes at least semi-annual written evaluations. Such evaluations are to be communicated to each resident in a timely manner, and maintained in a record that is accessible to each resident.

3. Assessment should include the use of assessment results, including evaluation by faculty, patients, peers, self, and other professional staff, to achieve progressive improvements in residents' competence and performance.

B. Final Evaluation

The program director must provide a final evaluation for each fellow who completes the program. This evaluation must include a review of the fellows performance during the final period of education, and should verify that the resident has demonstrated sufficient professional ability to practice completely and independently. The final evaluation must be part of the fellow's permanent record maintained by the institution.

C. Faculty

The performance of the faculty must be evaluated by the program no less frequently than at the midpoint of the accreditation cycle, and again prior to the next site visit. The evaluations should include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. This evaluation must include annual written confidential evaluations by residents.

D. Program

The educational effectiveness of a program must be evaluated at least annually in a systematic manner.

1. Representative program personnel (i.e., at least the program director, representative faculty, and one resident) must be organized to review program goals and objectives, and the effectiveness with which they are achieved. This group must conduct a formal documented meeting at least annually for this purpose. In the evaluation process, the group must take into consideration written comments from the faculty, the most recent report of the GMEC of the sponsoring institution, and the residents' confidential written evaluations. If deficiencies are found, the group should prepare an explicit plan of action, which should be approved by the faculty and documented in the minutes of the meeting.

2. The program should use resident performance and outcome assessment in its evaluation of the educational effectiveness of the residency program. Performance of program graduates on the certification examination should be used as one measure of evaluating program effectiveness. The program should maintain a process for using assessment results together with other program evaluation results to improve the residency program.

VIII. Experimentation and Innovation in Training

Since responsible innovation and experimentation are essential to improving professional education, experimental projects along sound educational principles are encouraged. Programs are encouraged to considered improvements or innovations in the training of Acute Care Surgeons. Requests for experimentation or innovative projects that may deviate from the program requirements must be approved in advance by the AAST, and must include the educational rationale and method of evaluation. Such deviations or innovations in training must remain consistent with ACGME principles of resident and fellow education. The sponsoring institution and program are jointly responsible for the quality of education offered to trainees for the duration of such a project.

IX. Verification and Certification

This fellowship is designed and verified by the American Association for the Surgery of Trauma. An essential component of the fellowship is completion of an ACGME RRC-approved Surgical Critical Care residency, with certification for that component provided by the American Board of Surgery. The Acute Care Surgery Fellowship training sites will be verified as complying with the AAST-sponsored Acute Care Surgery curriculum, and a certificate of completion of such fellowship will be provided by AAST.

X. Appendices

A. Curriculum outline

1. Required rotations

Required Clinical Rotation	*Length*
Surgical Critical Care:	
▪ *Trauma/Surgical Critical Care (resuscitative and post-op management of complex surgical illness related to general surgery and trauma)*	6 months
▪ *Electives in Critical Care (management of complex critical illness such as pediatric surgical critical care, neuro critical care, burns, etc.)*	3 months
Emergency and Elective Surgery	15 months
Total	**24 months**

2. Suggested rotations during Emergency and Elective Surgical experience.

Suggested Clinical Rotations	*Length*
▪ ***Acute Care Surgery***	4-6 months
▪ ***Thoracic***	1-3 months
▪ ***Transplant/Hepatobiliary/Pancreatic***	1-3 months
▪ ***Vascular/Interventional Radiology***	1-3 months
▪ ***Orthopaedic Surgery***	1 month
▪ ***Neurological Surgery***	1 month
▪ ***Electives (Burn Surgery and Pediatric Surgery recommended; others could include: Endoscopy, Imaging, Plastic Surgery, etc.)***	1-3 months
▪ ***Or: maximize time in above rotations***	
Total	**15 months**

B. Notes to Curriculum Outline

I. It is a requirement that over the 2-year fellowship, trainees participate in Acute Care Surgery call for no less than 12 months.

II. Flexibility in the timing of these rotations, and the structure of the 24-month training should be utilized to optimize the training of the fellow.

III. Rational for out of system rotations for key portions of the training must be based on educational value to the fellow.

IV. Acute Care Surgery fellowship sites must have RRC-approval for Surgical Critical Care training.

V. Experience in elective surgery is an essential component of fellowship training.

VI. An academic environment is mandatory and fellows should be trained to teach others and conduct research in Acute Care Surgery.

C. Operative Management Principles and Technical Procedure Requirements of Acute Care Surgery Fellowship.

AREA/PROCEDURE	*ESSENTIAL*	*DESIRABLE*	*COMMENT*
AIRWAY			
Tracheostomy, open and percutaneous	X		
Cricothyroidotomy	X		
Nasal and oral endotracheal intubation including rapid sequence induction	X		
HEAD/FACE			
Nasal packing	X		For complex facial fracture bleeding
ICP Monitor		X	
Ventriculostomy		X	
Lateral canthotomy		X	
NECK			
Exposure & definitive management of vascular and aerodigestive injuries	X		
Thyroidectomy		X	Essential if inadequate prior experience
Parathyroidectomy		X	
CHEST			
Exposure & definitive management of cardiac injury, pericardial tamponade	X		
Exposure & definitive management of thoracic vascular injury	X		
Repair blunt thoracic aortic injury: open or endovascular		X	
Partial left heart bypass		X	
Pulmonary resections	X		
Exposure & definitive management of tracheo-bronchial & lung injuries	X		
Diaphragm injury, repair	X		

AREA/PROCEDURE	*ESSENTIAL*	*DESIRABLE*	*COMMENT*
CHEST Cont.			
Definitive management of empyema: decortication (open and VATS)	X		
Video-assisted thoracic surgery (VATS) for management of injury and infection	X		
Bronchoscopy: diagnostic and therapeutic for injury, infection and foreign body removal	X		
Exposure & definitive management of esophageal injuries & perforations	X		
Spine exposure: thoracic & thoraco-abdominal	X		
Advanced thoracoscopic techniques as they pertain to the above conditions	X		
Damage control techniques	X		
ABDOMEN & PELVIS			
Exposure & definitive management of gastric, small intestine and colon injuries	X		
Exposure & definitive management of gastric, small intestine and colon inflammation, bleeding, perforation & obstructions.	X		
Gastrostomy (open and percutaneous) and jejunostomy	X		
Exposure & definitive management of duodenal injury	X		
Management of rectal injury	X		
Management of all grades of liver injury	X		
Hepatic resections	X		
Management of splenic injury, infection, inflammation or disease	X		
Management of pancreatic injury, infection and inflammation	X		
Pancreatic resection & debridement	X		
Management of renal, ureteral and bladder injury	X		
Management of injuries to the female reproductive tract		X	

AREA/PROCEDURE	*ESSENTIAL*	*DESIRABLE*	*COMMENT*
ABDOMEN & PELVIS Cont.			
Management of acute operative conditions in the pregnant patient		X	
Management of abdominal compartment syndrome	X		
Damage control techniques	X		
Abdominal wall reconstruction following resectional debridement for infection, ischemia	X		
Advanced laparoscopic techniques as they pertain to the above procedures	X		
Exposure & definitive management of major abdominal and pelvic vascular injury	X		
Exposure & definitive management of major abdominal and pelvic vascular rupture or acute occlusion		X	
Place IVC filter		X	
EXTREMITIES			
Radical soft issue debridement for necrotizing infection	X		
On-table arteriography	X		
Exposure and management of upper extremity vascular injuries	X		
Exposure and management of lower extremity vascular injuries	X		
Damage control techniques in the management of extremity vascular injuries, including temporary shunts	X		
Acute thrombo-embolectomy		X	
Hemodialysis access, permanent		X	
Fasciotomy, upper extremity		X	
Fasciotomy, lower extremity	X		
Amputations, lower extremity (Hip disarticulation, AKA, BKA, Trans-met.)	X		
Reducing dislocations		X	
Splinting fractures		X	
Applying femoral/tibial traction		X	

AREA/PROCEDURE	*ESSENTIAL*	*DESIRABLE*	*COMMENT*
OTHER PROCEDURES			
Split thickness, full thickness skin grafting	X		
Thoracic and abdominal organ harvesting for transplantation		X	
Operative management of burn injuries		X	
Upper GI endoscopy		X	Essential if inadequate prior experience
Colonoscopy		X	
Core re-warming (e.g., CAVR, CVVR)	X		
Diagnostic and therapeutic ultrasound	X		
Other procedures required by RRC for Surgical Critical Care	X		

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