THE AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA
ASSOCIATE MEMBER

HOW TO *SURVIVE* AND *THRIVE* AS AN EARLY CAREER ACUTE CARE SURGEON

EDITORS

Alexandra M.P. Brito, MB ChB BAO
Rachel D. Appelbaum, MD
Caitlin A. Fitzgerald, MD
Jarrett Santorelli, MD
Ida Molavi, MD
Jared Gallaher, MD, MPH
Saskya Byerly, MD
Joshua Dilday, DO
Lindsey L. Perea, DO
Christina Colosimo, DO, MS
Navpreet K. Dhillon, MD

PUBLISHED FALL 2025

E D I T O R S

Alexandra M.P. Brito, MB, ChB, BAO
AAST Associate Member
AMC Communications Chair
Assistant Professor of Surgery
Oregon Health and Science University
Clinical Instructor
The Queen's Medical Center
Honolulu, HI

Navpreet K. Dhillon, MD
AAST Associate Member
AMC Research and Education Councilor
Assistant Professor of Surgery, Loma Linda University
Clinical Assistant Professor of Surgery, University of California, Riverside
Riverside University Health System Medical Center
Moreno Valley, CA

Section I: Starting Your First Job
Rachel D. Appelbaum, MD
AAST Associate Member
Assistant Professor of Surgery
Vanderbilt University Medical Center
Nashville, TN

Section II: The Basics
Caitlin A. Fitzgerald, MD
AAST Associate Member
AMC Scholarship, Awards, and Development Committee Councilor
Assistant Professor of Surgery
East Carolina University, Brody School of Medicine
Greenville, NC

Section III: Navigating Your Early Career as an Administrator
Jarrett E. Santorelli, MD, FACS
AAST Associate Member
Assistant Professor of Surgery
Medical Director of Acute Care Surgery
Associate Program Director
Surgical Critical Care and Acute Care Surgery Fellowship
Director of Surgery Clinics
University of California, San Diego
San Diego, CA

Section IV: Navigating Your Early Career as an Educator
Ida Molavi, MD, FACS, FRCSC
AAST Associate Member
Clinical Assistant Professor of Surgery
University of Illinois Chicago
Advocate Illinois Masonic Medical Center
Chicago, IL

Section V: Navigating Your Early Career as a Scholar
Jared Gallaher, MD, MPH, FACS
AAST Associate Member
Assistant Professor
UNC School of Medicine at Chapel Hill
Chapel Hill, NC

Section VI: Navigating Your Early Career as a Leader
Saskya Byerly, MD, FACS
AAST Associate Member
Assistant Professor
Associate Trauma Medical Director
Associate Program Director, Curriculum, General Surgery
University of Tennessee Health Science Center
Memphis, TN

Section VII: Navigating Your Early Career as a Military Surgeon
Joshua Dilday, DO
AAST Associate Member
AMC Education Committee Chair
MAJ, MC, US Army
Adjunct Assistant Professor of Surgery
AMCT3 Partnership/Medical College of Wisconsin
Milwaukee, WI

Section VIII: What To Do When Things Don't Go According To Plan
Lindsey L. Perea, DO, FACS
AAST Associate Member
Program Director, General Surgery Residency Program, Philadelphia College of Osteopathic Medicine
Adjunct Assistant Professor of Surgery, Associated Faculty of the Perelman School of Medicine
Clinical Associate Professor of Surgery, Philadelphia College of Osteopathic Medicine
Adjunct Clinical Assistant Professor of Surgery, Lewis Katz School of Medicine
Medical Director, Trauma and Acute Care Surgery Research
Penn Medicine Lancaster General Health
Lancaster, PA

Section IX: Getting a Life
Christina Colosimo, DO, MS
AAST Associate Member
Assistant Professor of Surgery
Director of Outreach and Injury Prevention
University of Arizona
Tucson, AZ

A U T H O R S

Chapter 1: Preparing to Leave Fellowship

Dale Butler, MD, MBA, FACS
AAST Associate Member
Assistant Professor of Surgery
UT Southwestern Medical Center
Dallas, TX

Brandon Bruns, MD, MBA, FACS
AAST Member
Associate Professor of Surgery
UT Southwestern Medical Center
Dallas, TX

Chapter 2: Licensing and Credentialing

Jordan M. Kirsch, DO
AAST Associate Member
Assistant Professor of Surgery
Westchester Medical Center/New York Medical College
Valhalla, NY

Kartik Prabhakaran, MD, FACS
AAST Member
Associate Professor of Surgery
Westchester Medical Center/New York Medical College
Valhalla, NY

Chapter 3: Starting at a New Institution

Stephanie Savage, MD, MS
AAST Member
Professor of Surgery
University of Wisconsin-Madison
Madison, WI

Chapter 4: Building Relationships with Other Consultants

Amelia W. Maiga, MD, MPH
AAST Associate Member
Assistant Professor of Surgery
Vanderbilt University Medical Center
Nashville, TN

Stephen P. Gondek, MD, MPH, FACS
AAST Member
Assistant Professor of Surgery
Vanderbilt University Medical Center
Nashville, TN

Chapter 5: Organizing your Time

Samuel P. Carmichael II, MD, MS, FACS
AAST Member
Assistant Professor of Surgery
Wake Forest University School of Medicine
Winston Salem, NC

J. Jason Hoth, MD, PhD, FACS
AAST Member
Professor of Surgery
Wake Forest University School of Medicine
Winston Salem, NC

Chapter 6: Board Certification Renewal

Rondi B. Gelbard, MD, FACS
AAST Member
Associate Professor of Surgery
Medical Director, Surgical Critical Care
The University of Alabama at Birmingham
Birmingham, AL

Brett M. Tracy, MD, FACS
AAST Associate Member
Assistant Professor of Surgery
The Ohio State University, Wexner Medical Center
Columbus, OH

Chapter 7: Continuing Medical Education Maintenance

Samuel W. Ross, MD, MPH, FACS
AAST Associate Member
Assistant Professor of Surgery
Atrium Health Carolinas Medical Center
Charlotte, NC

Ronald F. Sing, DO, FACS, FCCM
AAST Member
Atrium Health Carolinas Medical Center
Charlotte, NC

Chapter 8: Basics of Coding and Billing

Stephanie Bonne, MD, FACS, FCCM
AAST Member
Associate Professor of Surgery
Chief, Trauma and Surgical Critical Care Center
Trauma Medical Director
Hackensack University Medical Center
Hackensack, NJ

Christine A. Castater, MD, MBA
AAST Associate Member
Assistant Professor of Surgery
Acute Care Surgery Ward
Medical Director, Grady Memorial Hospital
Morehouse School of Medicine
Atlanta, GA

Adora T. Santos, DO
AAST Associate Member
Trauma, Acute Care, and Surgical Critical Care Fellow
Emory University and Grady Memorial Hospital
Atlanta, GA

James Walker, MD
AAST Associate Member
Trauma, Acute Care, and Surgical Critical Care Fellow
Emory University and Grady Memorial Hospital
Atlanta, GA

Chapter 9: Preparing Your Promotion Packet

Joshua S. Ng-Kamstra, MDCM, MPH, FACS
AAST Associate Member
Assistant Professor of Surgery
Massachusetts General Hospital and Harvard Medical School
Boston, MA

George C. Velmahos, MD, PhD, FACS
AAST Member
John F. Burke Professor of Surgery
Division Chief of Trauma, Emergency Surgery, and Surgical Critical Care
Massachusetts General Hospital and Harvard Medical School
Boston, MA

Chapter 10: Starting a Private Practice

Carlos H. Palacio, MD, FACS
AAST Associate Member
Chair, Trauma Regional Advisory Council (TRAC-V)
Chair, Department of Surgery
South Texas Health System
McAllen, TX

Christian Martinez, PhD, MPH, MHA
Professor for College of Health Professions
The University of Texas Rio Grande Valley
Edinburg, Texas

Chapter 11: Insurance Policies

Dina M. Filiberto, MD, FACS
AAST Member
Associate Professor of Surgery
University of Tennessee Health Science Center
Memphis, TN

Chapter 12: Getting Involved in Committees and Quality Improvement

Paul Albini, MD, FACS
AAST Associate Member
Assistant Professor of Surgery, Loma Linda University
Clinical Assistant Professor of Surgery, University of California, Riverside
Riverside University Health System Medical Center
Moreno Valley, CA

Raul Coimbra, MD, PhD, FACS
AAST Member and Past President
Professor of Surgery, Loma Linda University
Riverside University Health System Medical Center
Moreno Valley, CA

Chapter 13: Getting to Know the Trauma Verification Process

Todd Costantini, MD, FACS
AAST Member
Professor of Surgery
Trauma Medical Director
University of California, San Diego
San Diego, CA

Lisa Kurth, MD
AAST Associate Member
Acute Care Surgery Fellow
University of California, San Diego
San Diego, CA

Chapter 14: Getting to Know the ACS Emergency General Surgery Verification Process

Reyna T. Gonzalez, MD, MS
AAST Associate Member
Assistant Professor of Surgery, Loma Linda University
Clinical Assistant Professor of Surgery, University of California, Riverside
Emergency General Surgery Medical Director
Riverside University Health System Medical Center
Moreno Valley, CA

Raul Coimbra, MD, PhD, FACS
AAST Member and Past President
Professor of Surgery, Loma Linda University
Riverside University Health System Medical Center
Moreno Valley, CA

Chapter 15: How to Become a Trauma Medical Director

Michael A. Vella, MD, MBA, FACS
AAST Associate Member
Assistant Professor of Surgery
Trauma Medical Director, Kessler Trauma Center
University of Rochester School of Medicine and Dentistry
Rochester, NY

Mark Gestring, MD, FACS
AAST Member
Professor of Surgery
University of Rochester School of Medicine and Dentistry
Rochester, NY

Chapter 16: How to Become a Surgical ICU Director

Laura N. Haines, MD, FACS
AAST Member
Associate Professor of Clinical Surgery
Medical Director, Surgical Intensive Care Unit
Surgical Critical Care - ACS Fellowship Program Director
Assistant Trauma Director
University of California, San Diego
San Diego, CA

Kendra Black, MD
AAST Associate Member
Acute Care Surgery Fellow
University of California, San Diego
San Diego, CA

Chapter 17: How to Become an Acute Care Surgery Director

Sebastian Schubl, MD
AAST Member
Associate Clinical Professor of Surgery
Director of Operations
University of California, Irvine
Orange, CA

Chapter 18: How to Get Involved in Prehospital Trauma Systems

Joshua Brown, MD, FACS
AAST Member
Samuel P. Harbison Endowed Assistant Professor of Surgery
Assistant Professor of Critical Care Medicine
Trauma Research Data Core Director, TTMRC
University of Pittsburgh
Pittsburgh, PA

Kristen T. Carter, MD
AAST Associate Member
Trauma Critical Care Fellow
University of Pittsburgh
Pittsburgh, PA

Chapter 19: How to Become a Program Director

Alexander C. Schwed, MD, FACS
AAST Associate Member
AMC Secretary
Assistant Professor of Surgery
David Geffen School of Medicine at UCLA
Associate Program Director, General Surgery Residency
Harbor-UCLA Medical Center
Torrance, CA

Linda A. Dultz, MD, MPH, FACS
AAST Member
Associate Professor of Surgery
Program Director, UT Southwestern Surgical Critical Care Fellowship
Medical Director, Parkland Hospital Surgical Intensive Care Unit
UT Southwestern Medical Center
Hospital Affiliation: Parkland Memorial Hospital
Dallas, TX

Chapter 20: Advice for Balancing Teaching and Consolidating Your Own Skills in the OR

Asanthi Ratnasekera, DO, FACS
AAST Associate Member
Clinical Assistant Professor of Surgery
Associate Trauma Medical Director
Drexel College of Medicine
Christianacare
Newark, DE

Paula Ferrada, MD, FACS, FCCM, MAMSE
AAST Member
Professor of Medical Education, University of Virginia
Division and System Chief, Trauma and Acute Care Surgery
Inova Healthcare System
Falls Church, VA

Chapter 21: Tips and Tricks for Teaching Outside the OR

Joe Forrester, MD, MSc, FACS
AAST Member
Assistant Professor of Surgery
Stanford University
Stanford, CA

Robert G. Sawyer, MD, FACS, FSIS, FCCM, FIDSA
AAST Member
Professor and Chair of Surgery
Senior Associate Dean for Research
Western Michigan University Homer Stryker MD School of Medicine
Kalamazoo, MI

Chapter 22: How to Help and Utilize Fellows, Residents and Students in Projects

Nicole Goulet, MD, FACS
AAST Member
Assistant Professor of Surgery
Weill Cornell Medicine/New York Presbyterian Hospital
New York, NY

D'Andrea Joseph, MD, FACS, FCCM
AAST Member
NYU Langone Hospital
Long Island, NY

Chapter 23: Strategies for Keeping Up with Important Literature

Julia R. Coleman, MD, MPH
AAST Associate Member
AMC Vice-Chair
Assistant Professor of Surgery
The Ohio State University, School of Medicine
Columbus, Ohio

Leah Tatebe, MD, FACS
AAST Member
Associate Professor of Surgery
Northwestern University, Feinberg School of Medicine
Chicago, IL

Chapter 24: Getting Started in Research

Mackenzie Cook, MD, FACS
AAST Associate Member
Associate Professor of Surgery
Oregon Health & Science University School of Medicine
Portland, OR

Martin Schreiber, MD, FACS, FCCM
AAST Member
Professor of Surgery
Oregon Health & Science University School of Medicine
Portland, OR

Chapter 25: Opportunities for Funding

Jonathan P. Meizoso, MD, MSPH, FACS
AAST Associate Member
AMC Treasurer
Assistant Professor of Surgery
University of Miami Miller School of Medicine
Miami, FL

Ben L. Zarzaur, MD, MPH, FACS
AAST Member
Professor of Surgery
University of Wisconsin School of Medicine and Public Health
Madison, WI

Chapter 26: K to R Pathways and Other NIH Pearls

Patricia Martinez-Quinones, MD, PhD
AAST Associate Member
Surgical Critical Care Fellow
Penn Medicine
Philadelphia, PA

Lisa Marie Knowlton, MD, MPH, FACS, FRCSC
AAST Member
Associate Professor of Surgery
Standard University School of Medicine
Palo Alto, CA

Chapter 27: Opportunities for Leadership Development

Tanya Anand, MD, MPH, MT(ASCP), FACS
AAST Associate Member
Clinical Assistant Professor of Surgery
Geriatric Trauma Director
University of Arizona Banner University Medical Center
Tucson, AZ

Bellal Joseph, MD, FACS
AAST Member
Professor of Surgery
Division Chief of Trauma
Executive Vice Chair
University of Arizona Banner University Medical Center
Tucson, AZ

Chapter 28: Local/Institutional Organizations and Committees

Isaac W. Howley, MD, MPH, FACS
AAST Associate Member
Assistant Professor of Surgery and Preventive Medicine
University of Tennessee Health Science Center
Memphis, TN

Thomas M. Scalea, MD, FACS, MCCM
AAST Member and Past President
Francis X. Kelly Distinguished Professor of Trauma
Physician in Chief, R Adams Cowley Shock Trauma Center
University of Maryland School of Medicine
Baltimore, MD

Chapter 29: Regional and Other Organizations and Meetings

Caroline Park, MD, MPH, FACS
AAST Associate Member
Assistant Professor of Surgery
Trauma Medical Director
University of Texas Southwestern Medical Center
Dallas, TX

Samuel P. Mandell, MD, MPH, FACS
AAST Member
Associate Professor of Surgery
Chief of Burns
University of Texas Southwestern Medical Center
Dallas, TX

Chapter 30: National Trauma Organizations and Meetings

Ara Ko MD, MPH, FACS
AAST Associate Member
Assistant Professor of Surgery
Associate Medical Director of the Surgical ICU
Associate Program Director of the Surgical Critical Care Fellowship
Cedars-Sinai Medical Center
Los Angeles, CA

David A. Spain, MD, FACS
AAST Member and Past President
Professor of Surgery
General Surgery Program Director
Stanford University
Stanford, CA

Chapter 31: Navigating Military Civilian Partnerships

Mike Derickson, MD
AAST Associate Member
MAJ, MC, US Army
AMCT3 Trauma and Surgical Critical Care
Nashville, TN

Brian Gavitt, MD, MPH, FACS
AAST Member
Colonel, USAF, MC, FS
Commander, 88th Surgical Operations Squadron
AF/SG Consultant for Trauma Surgery and Surgical Critical Care
Wright-Patterson AFB
Dayton, OH

Matthew D. Tadlock, MD, FACS
AAST Member
CAPT, MC, USN
Associate Professor of Surgery, Uniformed Services University
Department of Surgery, Naval Medical Center San Diego
San Diego, CA

Chapter 32: Preparing for Deployment as an Attending
Benjamin Franklin, MD
AAST Associate Member
LTC, MC, US Army
AMCT3 Trauma and Surgical Critical Care
Grady Memorial Hospital
Atlanta, GA

Matthew J. Martin, MD, FACS, FASMBS
AAST Member
Professor of Surgery
Chief, Emergency General Surgery
Director of Acute Care Surgery Research
Los Angeles General Medical Center
Los Angeles, CA

Chapter 33: Navigating National Organization Positions as a Military Member
W. Jason Butler, MD, FACS
AAST Associate Member
CDR, MC, USN
Assistant Professor of Surgery, Uniformed Services University
Naval Hospital Twentynine Palms
Twentynine Palms, CA

Matthew D. Tadlock, MD, FACS
AAST Member
CAPT, MC, USN
Associate Professor of Surgery, Uniformed Services University
Department of Surgery, Naval Medical Center San Diego
San Diego, CA

Chapter 34: Getting Negative Feedback or Discipline
Katherine Kelley, MD
AAST Associate Member
Kelley Acute Care Surgery
Pocono Lake, PA

Joseph DuBose, MD
AAST Member
Chair, AAST Multicenter Trials Committee
Professor of Surgery
Dell Medical School, University of Texas- Austin
Austin, TX

Chapter 35: When You Are Forced to be Involved in the Legal System
Rachel L. Choron, MD, FACS
AAST Associate Member
AMC Engagement Committee Chair
Assistant Professor of Surgery
Rutgers Robert Wood Johnson Medical School
New Brunswick, NJ

Matthew J. Martin, MD, FACS, FASMBS
AAST Member
Professor of Surgery
Chief, Emergency General Surgery
Director of Acute Care Surgery Research
Los Angeles General Medical Center
Los Angeles, CA

Chapter 36: Renegotiating Contracts: What Do I Need and How Do I Get It?
Christopher A. Butts, PhD, DO, FACOS, FACS
AAST Associate Member
Associate Professor of Surgery, Drexel University College of Medicine
Program Director, Surgical Critical Care Fellowship
Reading Hospital, Tower Health
Reading, PA

Kimberly A. Davis, MD, MBA, FACS, FCCM
AAST Member
Professor of Surgery
Chief of the Division of General Surgery, Trauma, and Surgical Critical Care
Yale School of Medicine
Yale, CT

Chapter 37: Transitioning Between Jobs
Alexander C. Schwed, MD, FACS
AAST Associate Member
AMC Secretary
Assistant Professor of Surgery
David Geffen School of Medicine at UCLA
Associate Program Director, General Surgery Residency
Harbor-UCLA Medical Center
Torrance, CA

Angela L. Neville, MD, FACS
AAST Member
Clinical Professor of Surgery, David Geffen School of Medicine at UCLA
Program Director, General Surgery Residency Program, Harbor-UCLA Medical Center
Harbor-UCLA Medical Center
Los Angeles, CA

Chapter 38: Financial Planning
Bo Zhang, MD
AAST Associate Member
Trauma/ACS Fellow, Clinical Instructor
University of Arizona Tucson
Division of Trauma, Surgical Critical Care, Burns, and Acute Care Surgery
Tuscon, AZ

C. Caleb Butts, MD, FACS
AAST Associate Member
Assistant Professor of Surgery
University of South Alabama
Mobile, AL

Chapter 39: Housing
Thomas S. Easterday, MD
AAST Associate Member
Assistant Professor of Surgery
University of Tennessee Health Science Center
Memphis, TN

Andrew J. Kerwin, MD, FACS, DABS
AAST Member
Professor of Surgery
Trauma & Surgical Critical Care Division Chief
Vice Chair for Faculty Development
The University of Tennessee Health Science Center
Memphis, TN

Chapter 40: Family and Fertility
Megan E. Lundy, MD
AAST Associate Member
Trauma/ACS Fellow, Clinical Instructor
University of Arizona Tucson
Tucson, AZ

Chrissy Guidry, DO, FACS
AAST Associate Member Whole Body Optimism

Chapter 41: Health and Wellness
Alexis Hess, MD
AAST Associate Member
WakeMed Hospital
Raleigh, NC

Jennifer L. Hartwell, MD, FACS
AAST Member
Associate Professor of Surgery
Section Chief, Emergency General Surgery
University of Kansas
Kansas City, KS

Chapter 42: International Medical Graduates Challenges
Devin O'Conner, MD
AAST Associate Member
Trauma/ACS Fellow, Clinical Instructor
University of Arizona Tucson
Tucson, AZ

Hassan Mashbari, MD, DABS
AAST Associate Member
Assistant Professor in Surgery
Trauma Pathway Leader, Jazan Region, Ministry of Health
General Surgery Residency Program Director, Jazan Region
Director of Jazan University Clinical Simulation & Life Support Center
Jazan Region Cluster Trauma Director & Cluster Trauma Committee Chair
Jazan University
Jazan, Saudi Arabia

TABLE OF CONTENTS

P R E F A C E

Dear New Acute Care Surgery Attendings,

Congratulations on signing your first contract as an independent attending surgeon! With your formal training complete (or nearing completion), you now face a transition that can be daunting. You will encounter new requirements, processes, and demands for your time. While the work hours may not be as arduous as residency or fellowship, you may find yourself with many new responsibilities with less structure as well as additional challenges. You will need to learn to balance administrative duties, professional requirements such as licensing, and other avenues of productivity such as research, while also developing and maintaining your skills as you teach others.

There is significant variability between acute care surgery practices. Our colleagues work in settings spanning the spectrum of small private community practices to level 1 trauma centers. That said, there are many common experiences with few organized resources. This handbook aims to help navigate the common issues faced by many new attendings in the field.

This handbook is the latest in a progressive lineage of resources starting with the Surgical Critical Care Program Directors Society (SCCPDS) guide to applying for Surgical Critical Care fellowships, which was followed by the American Association for the Surgery of Trauma Associate Member (AAST AM), SCCPDS, and Eastern Society for the Surgery of Trauma (EAST) guide to navigating fellowship and finding a first job. We will focus here on early career issues, although some topics could apply to other stages as well. Similar to the predecessor handbooks, this handbook is not meant to be read cover-to-cover and not all sections will apply to all readers based on their practice type, career goals, or other unique factors. We hope this handbook can serve as a useful resource where topics can be referenced quickly and easily.

We wish you the best of luck in your new role. The months and years ahead will be filled with many opportunities. Although setbacks and hiccups are to be expected, we encourage you to follow the same advice you have undoubtedly heard since intern year: ask for help when you need it, and use your resources!

Alexandra M.P. Brito, MB, ChB, BAO
Navpreet K. Dhillon, MD
Lead Editors

None of the authors has any financial interest, or any other conflict of interest, in connection with this handbook. This handbook is provided as a matter of convenience to its intended audience of new acute care attending surgeons. Neither this handbook nor anything inside it—including the tips, tricks, and helpful resources—is intended to define or serve as the standard of medical care. Standards of medical care are determined on the basis of all of the facts involved in an individual case and are subject to change as scientific knowledge and technology advance and as practice patterns evolve. No responsibility is assured or implied for errors or omissions herein, and no one shall be entitled to claim detrimental reliance for any representations herein.

SECTION I:
Starting Your First Job

Section Editor: Rachel D. Appelbaum, MD

CHAPTER 1:
Preparing to Leave Fellowship

Dale Butler, MD and Brandon Bruns, MD

Background:

The conclusion of fellowship represents a great source of excitement, counterbalanced by anxiety, for most trainees. After nearly a decade of training, young surgeons prepare to enter the medical system as a colleague and board-certified surgeon. As fellowship draws to a close, most fellows will have a job in hand. For many, this is their first career and for all it is the culmination of years of dedication to the field of surgery. To temper this undeniable anxiety, there are several efforts that a young fellow can preemptively initiate as they move forward in their career.

First Job Position:

The assortment of initial jobs for fellows are quite varied. Some will move on to an academic position, while others may choose a career in a community hospital. The key is to anticipate what the job requires and to hone skills further in the final portion of fellowship. For example, a person accepting a job at a large academic center may have very specific responsibilities as compared to a more general position in a rural area. The fellow should feel empowered to reach out to their new employer early for guidance. This includes requesting a sample of the call schedule, detailed information regarding service lines, and information on expectations for operative case type. Additionally, the fellow may use this as an opportunity to create a new program upon their arrival. For example, if the fellow's new employer shows interest in establishing an ECMO program, the fellow would do well to engage experts at their own institution before graduation and seek out cases.

Clinical Abilities

The primary focus of all fellows is functioning safely and efficiently in their first job. A good clinical reputation takes time and effort to build. Clinical skills are the qualities that all recent graduates are judged by. This is for multiple reasons; the hospital is most concerned with providing quality care for the patients and these are some of the most readily accessible metrics with which to evaluate surgeons. Therefore, the new fellow should prioritize their clinical aptitude and availability over other aspects of a new position. It is always possible to add other job functions and initiatives down the road, but it is next to impossible to recover from a poor clinical start. This said, it is not expected that newly minted Acute Care Surgeon will be able to handle every clinical scenario without assistance. Establishing a group of trusted and more seasoned surgeons to give clinical advice and assist with difficult cases is recommended.

Research

Fellows may have the opportunity to engage in many interesting research initiatives during training. Of equal importance is to plan for the continuation of these research projects

once fellowship concludes. Data restrictions likely apply and so date sets are not likely to be transportable. If the project is ongoing, fellows must designate an appropriate colleague to carry the investigation forward. Trainees invest far too much time and effort to leave a project orphaned upon graduation. Open communication with the PI will ensure that all loose ends are tied prior to departing the training institution. The graduating fellow should also keep a list of all outstanding projects and the requirements for completion. Finally, they should remain in contact after graduation to fulfill their academic commitment and to ensure they receive credit for academic products of their work (i.e., papers and presentations).

Keep Records of Successful Processes

Odds are that the processes at a fellow's institution will differ from their first employed position. Keeping notes on successful processes during training allows the graduate to bring new and innovative ideas to their next hospital. Clinical practice guidelines, ICU processes, and programmatic standards are some examples of potentially exportable documents. Note templates are also useful to carry forward to a first job and are easily transported electronically. It is far easier to adapt a previously proven successful process at the next institution that to start from scratch.

OR Preference Cards

Many fellows identify a particular attending that they admire and wish to emulate in the OR. One effective way to carry teaching forward is to request and adopt the attending's preference card. The OR can easily provide copies of preference cards so that fellows have a baseline to adopt at their next hospital. This also affords the fellow an opportunity to request specific instruments prior to their arrival if they are not stocked at the future employer. Having the correct instrumentation ready to go will prevent unnecessary frustration and expedite the start of the young surgeon's clinical practice.

Conclusion:

With some thoughtful preparation, the graduating fellow can easily prepare themselves for their first job. This will have the added benefit of allaying any anxiety and allow the fellow to focus on the excitement of their first job as a surgeon!

Helpful Resources:

- https://www.womensurgeons.org/assets/docs/Finding-and-Keeping-Your-Job.pdf
- https://www.royalcollege.ca/en/membership/membership-royal-college/transition-to-practice.html

CHAPTER 2:
Licensing and Credentialing

Jordan M. Kirsch, DO and Kartik Prabhakaran, MD, FACS

Background:

The keys to streamlining licensing, credentialing, and privileging are to first understand the differences of each step for the process and to prepare.

Licensing: An occupational license, generally issued by individual states that legally permits the practice of medicine.

Credentialing: The process of assessing and confirming the license or certification, education, training, and other qualifications of a licensed or certified health care practitioner

Privileging: The process of authorizing a health care practitioner's specific scope and content of patient care services.

Enrollment: The process of applying to health insurance plans/networks for inclusion into provider panels to bill and be paid for services rendered. (The Credentialing, Privileging, and Enrollment Process: What you don't know can hurt you!)

Tips and tricks:

- Make copies of every diploma, medical license, or board/course certification and keep a scanned version in a folder on your computer or the cloud. Consider using a centralized resource (i.e., FCVS) that can help maintain these files and disseminate to individual licensing boards.
- Office or copy stores can scan and/or copy oversized documents.
- Keep a list of your license, board certifications, NPI, and DEA numbers and expiration dates on your phone.
- Original documents including passports or birth certificates are sometimes needed, so be sure to keep these somewhere easily accessible if you are moving.
- If you know which state you plan to practice in or will be in states that participate in the Interstate Medical Licensure Compact, apply for a license in advance. Save the receipts as you can often get reimbursed by your future employer. Keep contact information for any previous training programs.
- You will be required to report any previous malpractice claims, so keep basic information about the case with your other documents. These can often be verified with your institution's risk management or legal departments.
- Save your case logs in residency and fellowship with special attention to procedures that may be out of the typical scope for acute care surgeons, i.e., ECMO, VATS, rib/sternal

plating, robotic surgery. Keep letters endorsing your advanced skills from program directors and chairs.

- Individual institutions vary with respect to timelines for verification of credentials and processing of requests for privileges. Once you have signed a contract, stay in constant contact with Departmental Administrators and Human Resource Administrators and be proactive in ensuring that documentation provided is received and sufficient.

5-Year Goals:

- Maintain a list of all operative cases performed within the first 5 years as this will be important for application to various organizations (i.e., FACS), institutional re-credentialing, and application for new privileges.
- Renew all licensure and regulatory certificates in a timely fashion as this is essential for maintaining your privileges. Keep records of renewals, and save receipts for reimbursement by your institution.
- Ensure that you are meeting requirements for the maintenance of recertification of all relevant specialty boards.
- Keep track of the outcome of any malpractice claims where you are listed as a defendant. This is important in ensuring that your self-reported data in applications for new credentials or renewal are accurate, and congruent with national reporting organizations.

Checklist of Documents and Certifications:

1. Undergraduate Diploma
2. Medical School Diploma
3. USMLE Step Completion and Scores
4. NPI
5. DEA
6. Specialty Board Certifications
7. Malpractice Claims and Settlements
8. Specialty Course Certifications
9. Verification of Post-Graduate Training (from any and all institutions)

Conclusions:

Transitioning from fellowship to independent practice involves complex administrative juggling. With planning and organization, you can make your life easier down the road. Keeping an organized digital filing system will set yourself up for success.

Helpful Resources:

- Physician License | Interstate Medical Licensure Compact (imlcc.org)
- 2019 Interim Meeting presentation: The credentialing, privileging and enrollment processes: How what you don't know can hurt you! (ama-assn.org)

CHAPTER 3:
Starting at a New Institution

Stephanie Savage, MD, MS

Background:

Starting at a new institution as a junior faculty can be a double-shock to the system. Not only do you need to establish a working relationship with your partners and learn the healthcare system, but you are also learning to be an attending. In many cases, it is on-the-job training. Fortunately, in the current era, many Acute Care Surgery (ACS) fellowship programs include a transition-to-practice model which may help prepare faculty for these changes. In addition, many faculty positions will have defined clinical expectations, so the clinical practice may be quite well-defined. Learning how you fit into the system, including the health system, medical school, residency training program, and partner groups, can be challenging but rewarding.

Who ARE my partners

Starting as a new attending and getting to know, and trust, your partners is a longitudinal process. Establishing your role in a group, especially a group of partners that are more senior or who have been together for a long time, can be intimidating. The challenge is exponentially compounded when you are joining a group with someone who trained you. The group hired you because they like you and they respect you as a surgeon. Though being respectful to your partners is important (always), resist the urge to default to formality and refer to your partners as 'Dr. So-and-so.' Use of their given name is expected and establishes a collegial relationship rather than a hierarchical one. That being said, circumstances may vary with leadership such as your Chair, Dean etc.

Taking advantage of group or departmental social events is helpful to create and cement relationships. However, the quickest and most reliable way to establish relationships with your partners is to be present at work. Though seemingly obvious, in the peri-COVID era, this is not a given. Showing up to sign out in person, even when not on service, gives you facetime with your partners, the residents, and APPs, and provides insights on the culture of the system, including potential pitfalls. Being in the office also allows time to stop by a partner's office to chat, discuss challenging cases and generally create collegiality.

Working with residents: Trust goes both ways

Learning about the residency, if your institution has a residency program, is fairly straightforward. Residency rotations are regulated within your program and independent of new faculty. Learning to teach residents of all levels, and gauging autonomy, is not straightforward and takes practice. An important aspect is to learn how much supervision is mandatory in clinical settings at your institution. Talking to your partners is very helpful in understanding autonomy in regards to residents at your institution. This will also help you understand the skill sets of individual trainees. In general, a more hands-on approach early in

your faculty position is reasonable, as you learn your team's skills and understand how far to extend the autonomy. Residents appreciate the implied confidence and the chance to stretch their skills.

In more complex cases, attending involvement depends on acuity, how important speed is, how technically competent the team is, and the case type. Attending presence is generally encouraged for teaching and you can decide intra-operatively when to step back and extend more autonomy. At new institutions, junior faculty must learn how and when to allow residents autonomy in care. This is really one of the biggest challenges that junior faculty face and is an active area of growth throughout our careers.

How the Department works

Learning the structure of the Department and system will take time. In multiple career moves, it seems to take approximately two years before a new faculty (or an experienced one) becomes truly integrated into the system. A significant potential pitfall is the 'oh good, new faculty is here' syndrome. Many new partners will want to offload unwanted tasks to the new member and the new member may feel compelled to say yes in order to maintain relationships. Additionally, as a new faculty you may feel tempted to sign up for every opportunity in order to make a niche or establish yourself. Unfortunately, this can result in significant non-clinical commitments that do not align with your interests or career needs.

In general, it is reasonable for new faulty to try and say no to these offers of new responsibilities, committee assignments, and other extraneous tasks for the first six months. New faculty need to learn the ropes and your time will be consumed with administrative tasks that provide no real benefit to your development or career trajectory. Saying no for six months will require the support of your Division Chief and is a good thing to discuss when you start. If this is not supported in your division, it is not a hill to die on.

After six months, the 40/40/20 rule for your non-clinical commitments is recommended. 40% of the commitments you take on should be things that interest you and directly contribute to your growth and success. Another 40% of things should be things that are important to the Division/Department/system and have the potential to be interesting or important to you. The remaining 20% of commitments are 'good citizen' items. They may not be particularly compelling, or even interesting, to you but are your responsibility as a good citizen of the group.

Ultimately, there is no secret answer or perfect recipe for success. Being patient is tough, but important. Be present and talk to a lot of people. Many of the committees you join will create relationships outside your immediate work group that will provide future opportunities. Most importantly, when you commit to a task, see it to completion and produce a good product. The person who shows up and comes through will be tapped in the future for higher profile and more important assignments that will advance your career and the mission of your division.

Helpful Resources:

- Bleier JI, Kann B. Academic goals in surgery. Clin Colon Rectal Surg. 2013 Dec;26(4):212-7. doi: 10.1055/s-0033-1356719. PMID: 24436679; PMCID: PMC3835482.

CHAPTER 4:
Building Relationships with Other Consultants

Amelia W. Maiga, MD, MPH and Stephen P. Gondek, MD, MPH, FACS

Background:

Early career surgical attendings must learn to build collaborative relationships with colleagues in a variety of specialties. While this section is primarily oriented towards those preparing to practice at tertiary academic medical centers, these same principles and guidelines also apply to those entering community practice and academic-affiliated practices. The adage "no surgeon practices in a silo" should be a central tenant to all new practitioners.

At the conclusion of your residency and fellowship training, you will be a competent, honest, hard-working, and principled surgeon – well-trained clinically and ready to begin independent practice. The key is building relationships with other consultants centered on the care of the patient, whereby the patient's needs eclipse those of any provider or the hospital system. Just as in training, you will earn the respect of others by working collaboratively and focusing an excellent patient care.

Establishing authenticity and trust with other specialists involves both competency-based trust and character-based trust. It is not enough to be right; you must also convey that you can be trusted, that you are committed to excellence, and that you care about your colleagues as individuals. Trust is earned through small interactions with patients, colleagues, and other team members. While commonly thought of as fixed abilities, emotional and professional intelligence are teachable skills. Any attention to improving these skills also helps develop collaborative relationships with colleagues and outside specialists at work.

5-Year Goals:

- Establish good working relationships with 1-2+ providers in each consulting specialty
- Build your clinical niche and cultivate referral patterns

Goal Breakdown:

Establish good working relationships with 1-2+ providers in each consulting specialty

Identifying your go-to "person" or persons in key specialties is essential for an early career surgeon. You need to be able to pick up the phone and call someone in a range of specialties. For an acute care surgeon practicing both trauma and emergency general surgery, this would include an advanced endoscopist (for that weekend ERCP), an interventional radiologist, a thoracic surgeon, a bariatric surgeon, a colorectal surgeon, an orthopedic surgeon, a neurosurgeon, emergency medicine, and potentially general medicine. These early clinical relationships often become the basis of ongoing professional working relationships.

Surgeons staying at the same institution may have the advantage of already being well-connected or aware of the range of providers across different specialties, including their niche expertise, personalities, and caveats. However, the power relationship between a trainee and other specialists may be skewed. Converting that to a peer relationship can be challenging once you make the transition to junior faculty, but is a necessary step, including the uncomfortable transition to using everyone's first name as mentioned earlier. Additionally, for surgeons who stay in their training institution, maintaining a professional relationship with trainees may be more difficult.

Surgeons starting their career at an outside institution may have a different set of challenges – namely, in addition to trying to figure out parking, the scrub machine, and the local institutional culture, you also need learn the referral and specialty landscape for a range of disciplines. Rely on your more senior partners to jump-start your network. Ask around for specific names. Meeting people in person is critical to establishing the character-based trust cited above. Relationships in medicine are formed around clinical care and reinforced by other personal interactions. The more you care for patients together with a shared mission, the more you will strengthen those relationships with other providers.

Build your clinical niche and cultivate referral patterns

For acute care surgeons, much of our clinical volume is unsolicited and directly tied to being on clinical service at the moment that a patient needs surgical care. As such, you may or may not begin your faculty career with a pre-selected clinical niche for which you intend to build referral patterns. Over time, however, you may develop a special interest in complex biliary surgery, abdominal wall reconstruction, pancreatic debridement, or another specific area. If you would like to do more of a specific elective operation, tell people! Talk to others within your organization and learn how, for example, complex hernia patients are allocated to specific providers for initial evaluation. Get on the list of providers who would like to see those patients. If you get a referral that you like, feed that information back to the referring provider, both by cc'ing them on your clinic note and by sending them an informal message. PHI information should stay within the appropriate channels, but a personal message can go a long way to close the loop and build those referral patterns that you would like to encourage.

Helpful Resources:

- Emotional Intelligence by Daniel Goleman
- Captivate by Vanessa Van Edwards
- Clark MC, Payne RL. Character-based determinants of trust in leaders. Risk Anal. 2006 Oct;26(5):1161-73. PMID: 17054523.

SECTION II:
The Basics

Section Editor: Caitlin A. Fitzgerald, MD

CHAPTER 5:
Organizing Your Time

Samuel P. Carmichael II, MD, MS, FACS
and J. Jason Hoth, MD, PhD, FACS

Background:

The organization of your time as a new attending can be a daunting task. Whereas time commitments during residency and fellowship are largely clinical and pre-determined by your program, transitioning from trainee to independent practice confers multiple clinical and non-clinical commitments. With planning and organization, you can increase your efficiency in each of your various roles and make your life easier during these early years of practice through prioritization.

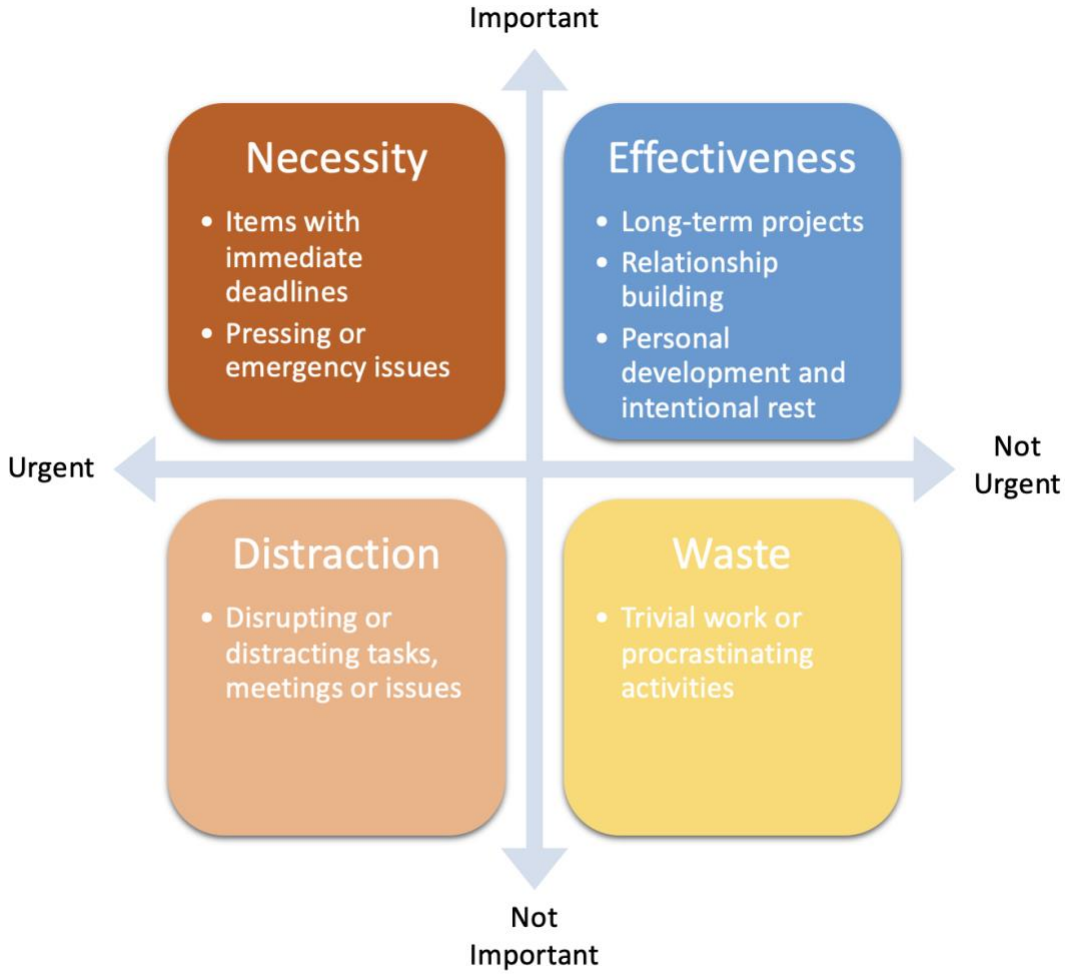


Figure 1. Modified from Covey, Steven. 2004 "The 7 Habits of Highly Effective People". Free Press and Franklin Covey https://www.franklincovey.com/the-7-habits/habit-3/

Overview: A good plan for the organization of your time has everything to do with the *type of practice emphasis you would like to develop*. Thus, organizational planning should be oriented around your focus area of growth. Rather than dedicating equal shares of time to all categories, thoughtfully consider balancing your time with a majority of your "effectiveness" (**Figure 1**) dedicated to roles into which you would like to grow. Practically, these emphases share overlap with the goals of promotion and tenure (P&T) and should be regularly discussed with your section head or chair.

Emphasis Breakdown:

1. Clinical
    a. A clinical emphasis focuses on service-line effort and optimization
    b. Designing and improving clinical protocols
    c. Leadership roles include: ICU director/co-director apprenticeships, trauma or EGS service line director, intramural/extramural committees

2. Education
    a. An educational emphasis focuses on the teaching of trainees
    b. Designing and improving evaluations by learners, curriculum, teaching conferences and lectures, clinical simulation, formal mentoring
    c. Leadership roles include: medical student clerkship director, residency program director or assistant director, fellowship director or assistant director

3. Scholarship and Research
    a. A scholarship and research emphasis focuses on novel investigation in either clinical or pre-clinical areas
    b. Generation of publications for peer-reviewed journals, books and book chapters, presentations and exhibits at regional, national and international meetings, ad hoc reviewer roles
    c. Leadership roles include: division research director, intramural/extramural committees

4. Administrative
    a. An administrative emphasis focuses on leadership on a divisional, departmental, or hospital/medical school level
    b. Designing and improving hospital or medical school policy and leading community outreach efforts for the department or institution
    c. Leadership roles include: section head or medical director

Helpful Resources:

1. Covey, S.R. (1989). The seven habits of highly effective people: restoring the character ethic. New York, Simon and Schuster.

CHAPTER 6:
Board Certification Renewal

Rondi B. Gelbard, MD, FACS and Brett M. Tracy, MD, FACS

Background:

Congratulations on reaching this stage of your career! At this point, you have likely taken your General Surgery Qualifying and Certifying Exams, and perhaps your Surgical Critical Care Certifying Exam. Even though those initial crucial exams are in your recent past, you will be required to renew your board certification(s) every two years throughout your career. While this may seem a bit daunting at first, it is meant to demonstrate your ongoing commitment to lifelong learning, practice improvement, and upholding the high standards of the American Board of Surgery (ABS). This process of Continuous Certification requires that you are currently certified in general surgery by the ABS and in compliance with the ABS Continuous Certification Program. This section of the handbook will outline the necessary steps for maintaining your certificates in the years to come.

Timeline/Goals:

1. Enroll in ABS Continuous Certification Program (once)
2. Update Program requirements online (ongoing basis)
3. Pay Annual Fee
4. Register for Assessment (every other year)
5. Complete the Assessment (every other year)

Enroll in ABS Continuous Certification Program

All ABS diplomates must enroll in the Continuous Certification Program to remain certified. If you were initially certified prior to 2018, once you register for an assessment (see step 4 below), you will be enrolled in the program. If you are a newly certified diplomate (i.e., after 2018), you are automatically enrolled in the process after your initial certification. Once enrolled, Continuous Certification applies to all certificates that you hold, in any ABS specialty.

Update Program Requirements

The next step in this process is to update the Continuous Certification program requirements. It is an ongoing process and we strongly recommend frequently reviewing these requirements so you are not rushing to complete everything at the last minute. The requirements include: **a valid, full and unrestricted medical license, proof of hospital privileges** (if clinically active), **two reference forms** (one from the Surgery Department Chair and one from the chair of credentials or physician of comparable rank), and **evidence of ongoing participation in outcomes registry or quality assessment program** (either individually or through your institution). Some examples of quality assessment program include the National Surgical Quality Improvement Program (ACS NSQIP®), National Trauma Data Bank (NTDB®), or Trauma Quality Improvement Program (ACS TQIP®). Participation in an ERAS

protocol, or development of an intervention to improve service in your hospital also count towards this requirement.

You must also keep track of your continuing medical education (CME), as the ABS requires that you have **150 credits of Category 1 CME** relevant to your specialty over a five-year period (50 credits must include self-assessment (SA)). When you participate in a CME activity, there are two ways to transfer your CME as manual entry is no longer an option. The first way is by giving the CME provider permission to share your CME credit information with the ABS, after which the credits will automatically transfer to your ABS CME repository via the PARS system. The second way is to transmit credit from ACS *My*CME to the ABS via the ACCME (link below). You will be asked to provide your ABS ID (found in the ABS Portal) and grant permission for the data transfer.

The best way to track your CME is with the CME Repository on the ABS website (link below). After you pass your first continuing certification assessment, the CME requirement decreases to 125 CME credits with no SA. If you are certified by a different board, activities supported by these other boards that meet ABS requirements can be used. If you are a new diplomate who passed an initial certifying exam, the ABS will waive 60 credits of CME for your first continuous certification. While you usually don't have to provide proof of these requirements (you simply describe them in the online forms), you could be audited by the ABS, in which case you must provide documentation of everything, including CME activities.

Pay Annual Fee

Once you enroll in the Continuous Certification program, an annual fee (currently $285) that covers all aspects of the program, including the assessment, is required. If you hold more than one ABS certificate (i.e., general surgery and critical care) it will cost $285 for your first certificate, plus an *additional annual fee of $150 for each additional certificate.* If you are registering for your first assessment, this fee will be required at the time of registration, and annually thereafter. If you do not pay your annual fee in a given year, you will be charged a late fee the following year, and you must pay the balance before registering for your next assessment. If you miss the payment again, you will lose your certification until it is paid.

Register for Continuous Certification Assessment

The next step is to register for your Continuous Certification assessment(s). These online assessments must be completed every other year, *before* your current certificate(s) expire. For example, if you achieved initial certification for general surgery in the 2021-2022 academic year, you would take your first general surgery assessment in the fall of 2024. If you became certified in surgical critical care in the summer of 2023, you would take your first critical care assessment in the fall of 2025.

The ABS will notify you (usually via email and regular mail) when the time to renew is approaching. Assuming that you are up to date with all program requirements and program fees, once the registration window opens, you can register for the assessment. If you are renewing both your general surgery and critical care certificates in the same year, you must register separately for each exam. Dates for the registration and assessment window can be found on the ABS website.

Complete the Continuous Certification Assessment

The assessments, which are completely online and open book format, consist of forty core and practice-related surgical questions. For general surgery, in addition to the required *Core Surgery* questions, you must select a second module from a list of practice-related topics (such as *Alimentary Tract* or *Breast Surgery*) based on your interests. A reference list is provided for each module, with direct links to the article for each reference. In fact, these can be accessed on the ABS Reference Archive at any time, although advanced preparation for the exam is not required.

Once you begin the assessment, a single question is displayed at a time, which must be answered to proceed. You cannot navigate backwards to previously answered questions, but you will receive immediate feedback on your response and rationales for each correct answer. While the test itself is not timed, once you begin the assessment, you have *two weeks* to complete it (so do not begin the exam if you know you will be traveling, clinically busy or have multiple other deadlines in that time period). If you cannot complete the exam in one sitting, you can save your progress and continue at a later time (within that two-week window). If you are taking more than one assessment, allow yourself ample time to complete both!
You need 80% (32 questions) correct to pass, with at least 40% (16 questions) correct on the first attempt to quality for a second attempt. If you pass, congratulations! Your certification is renewed for another two years and your current status will be listed in the American Board of Medical Specialties (ABMS) online directory. You will receive a preliminary score report in your portal right away, and a final score report within 4-6 weeks of the close of the examination window. If you do not pass on the second attempt, you may retake it the following year (grace year) without affecting your certification status, provided your program requirements are fulfilled (see above). However, if you do not pass during the grace year, you will lose your certification.

Unique Circumstances

If you leave clinical practice and are no longer caring for patients (i.e., in an administrative or research setting) you can still complete the Continuous Certification process through the **Certified-Clinically Inactive** designation. There are certain modifications to the requirements and registration process which are listed on the ABS website.

If you are clinically inactive and decide to return to active practice you will be required to submit information regarding your return to clinical activity, including plans for monitoring and evaluation during the re-entry process, and fulfill additional requirements based on your particular circumstances.

If for any reason your certification lapses and it has been less than two years, you can re-enter the continuous certification assessment process. However, you must take and pass the assessment annually for five consecutive years (without grace years), after which you will enter the standard schedule of every other year.

Helpful Resources:

1. https://www.abms.org/quality-improvement-support/ - ABMS Portfolio Program to submit QI work for continuing certification credit from an ABMS Member Board
2. https://www.absurgery.org/login.jsp;jsessionid=D23EF065E967B16F8E88EAACDB9B75C3?app.jsp?type=2023MC&id=7 - ABS website with link to continuous certification information, and ability to view when items are due and submit any necessary information
3. https://cmepassport.org/activity/search?boards%5b%5d=American%20Board%20of%20Surgery – Website to find CME activities that meet ABS continuous certification requirements (can filter by specialty)
4. https://www.facs.org/for-medical-professionals/education/tools-and-platforms/mycme/ - *My*CME to view, upload, and track CME activities and electronically share CME Credits with the ABS

CHAPTER 7:
Continuing Medical Education Maintenance

Samuel W. Ross, MD, MPH, FACS and Ronald F. Sing, DO, FACS, FCCM

Background:
Continuing medical education (CME) is mandatory for most state licensure and for the American Board of Surgery re-certification. CME opportunities are plentiful but finding, verifying, and completing CME requirements can be hard to navigate.

5-Year Goals:
-Verify state medical board CME requirements
-Verify and complete American Board of Surgery (ABS) CME requirements
-Find and link American College of Surgeons (ACS) and Local CME Repositories
-Utilize and claim easy and plentiful sources of CME
-Utilize less common but useful CME sources when available
-Streamline process for CME capture to ensure you obtain and record more CME than required

Goal Breakdown:

State CME Requirements:

After obtaining licensure in your state or states of practice, maintaining CME per year is required by all state medical boards. Typically, there is a grace period after obtaining an unrestricted license for the first time to get acclimated to the system of non-training medical education. However, after this grace period the state will require attestation and sometimes proof of CME hours per year or cycle. For example, North Carolina requires 60 hours of Category 1 CME per cycle for a three-year cycle. Most states have less hour requirements than certifying boards such as the ABS. The American Medical Association has an Education Hub with many opportunities for free CME, and a page with every state's requirement and links along with CME activities designed to fulfill those requirements.

ABS CME Requirements:

The American Board of Surgery's requirements for General Surgery CME have changed over the past decade with the transition to continuous certification. Those still grandfathered under the 10-year certification cycle (last issued in 2018) were initially required 150 CME hours with 50 hours of self-assessment for the first 5 years followed by 125 hours of non-self-assessment hours. Importantly, passing the certifying exam in General Surgery *AND* Surgical Critical Care each are awarded 60 hours, completing the self-assessment portion and almost the entire CME amount for the first 5 years. The above is still the requirement after going to the 2-year continuous certification cycle, however after the first continuous exam completion the

requirement changes to 125 hours with no self-assessment. This means that virtually no self-assessment is now required to maintain ABS certification. For additional CME hours, the ABS has helpful links to the Accreditation Council for Continuing Medical Education (ACCME) CME Passport site. You can keep track of your CME hours reported to the ABS on the CME Repository page and the ABS CME page linked below provides helpful information on how to link CME from various sources to the ABS CME repository.

ACS and Local CME Repository Utilization and Linkage

Now for the rub; if you are anything like me you likely thought that all your CME would automatically get linked to your ABS account, however that is not the case. By far, the most common source of CME available is at your home hospital and/or medical school. There is usually a local or regional CME body in charge of certifying CME hours for physicians and other medical professionals. For example, The North Carolina Area Health Education Centers (NC AHEC) Program provides statewide medical education and certification of CME by region of the state, while other facilities have hospital or medical school-based program. These can include education from a myriad of activities from morbidity and mortality conference, grand rounds, seminars, courses, lectures, etc. These programs alone can account for all the CME needed for state and ABS purposes, but correct registration, tracking, and then reporting to the certifying bodies is required. A word of caution, if the local CME is incorrectly tracking your activities or has two unmerged logs for your activities (this actually happened to me) then the CME hours reported can be severely underreported. It is IMPORTANT to link your local CME repository to the ABS which is exclusively done electronically now.

The ACS also keeps and tracks CME for your use and this can be a substantial source of CME from ACS courses and ACS verified CME hours from conferences. The many regional surgical conferences, AAST, EAST, Western Trauma, and the ACS Annual Conference can easily be linked to your ACS member ID. Again, you must LINK your ACS CME Repository to your ABS CME Repository, it is NOT automatic.

Common and Uncommon CME

As mentioned above, the most common sources of CME are accomplished in the daily activities of being at an academic medical center such as surgical conference, quality meetings, educational lectures, seminars, and courses. It is also important to log CME hours for your own lectures and invited presentations, these add up quickly. In community settings, multiple activities can still count, such as quality collaboratives, webinar attendance, review of quality reports. In fact, the ACS will give CME hours now for reviewing TQIP and NSQIP reports for your facility. The above meetings are excellent sources for CME hours especially the needed trauma hours, however, be sure to log the hours and complete assessments before the mandatory window closes. A good time to do these is on the way home at the airport to ensure you will not forget in the weeks to months before the deadline to submit. Reviewing submitted journal articles is also now a way to obtain CME, as the hours used for review now can be reported through the managing company such as Elsevier or Springer. Writing articles can now also be submitted for credit, as the AMA will grant CME for teaching, being first author on an article, and obtaining a medically related advanced degree. Additionally, the AMA and ACCME provide readily available online free educational activities with a host of interests.

Streamlining CME Recording

As you can see above, CME activities are plentiful, but ensuring you receive credit for all the education you are performing can be tricky. Linking your ACS, local, ABS CME repositories early and often is a key first step. Ensure ACS member ID linkage for any conferences, and non-ACS verified CME can still be uploaded to the ACS CME repository. Copying your administrative assistant on CME emails, evaluations, and certificates can be helpful to ensure they are captured before the deadline, logged correctly, and get linked to your ABS and state repositories. Do not forget: your institution should also pay for CME expenses to a set maximum per year, utilize this to get the CME you need!

Helpful Resources:

1. American Medical Association CME Requirements by State: https://edhub.ama-assn.org/state-cme
2. American Board of Surgery CME And Self Assessment Page: https://www.absurgery.org/default.jsp?exam-moccme
3. ACCME CME Passport Site Filtered for ABS Topics: https://cmepassport.org/activity/search?boards[]=American%20Board%20of%20Surgery
4. American College of Surgeons CME Home/Repository: https://cmeapps.facs.org/cme/

CHAPTER 8:
Basics of Coding and Billing

Stephanie Bonne, MD, FACS, FCCM, Christine A. Castater, MD, MBA, Adora T. Santos, DO, and James Walker, MD

Background:

Misconceptions and misunderstandings about critical care billing can lead to losses of critical care charges. Critical care billing requires specific documentation within the medical record, which must be meticulous and requires specific language. Once critical care services and procedures are properly documented, they will generate a an E/M code (evaluation and management), for the critical care time, or procedural code for procedures that are performed. The codes for critical care are 99291 (for the first 74 minutes) and 99292 (for every 30 minutes thereafter). Lost critical care charges can be both significant and unnecessary. Identifying and understanding the nuances of critical care billing helps to optimize trauma center revenue.

Understanding RVUs, Reimbursement and Revenue Cycle:

The E/M and procedural codes generate a standard number of relative value units (RVUs). RVUs are defined in the US code of Federal Regulations and assign dollar amounts to physician services with 50% being physician work, 40% being expenses, and 10% being malpractice. This "physician work" is defined by many factors that are calculated by the Relative Value Scale Unit Committee (RUC).

Many physician reimbursement models utilized by academic institutions, large multispecialty groups, or hospitals tie the surgeon's remuneration to RVUs, either by creating minimum RVU requirements or by tying annual bonuses to RVU-based productivity. However, with lower payments per RVU annually, and a decreasing conversion factor for the amount of work required to generate an RVU, it is imperative for physicians to understand how to best maximize their RVUs in order to demonstrate their value to the system and potentially increase their earnings.

In order for a procedure or E/M visit to be billable, third-party payors require not only "what" was done to a patient but also "why." This is communicated through "ICD" codes. The International Classification of Diseases (ICD) codes describe which diagnosis or diagnoses explain the "why" a procedure or E/M service was performed. Although multiple procedures can be billed, the Correct Coding Initiative (CCI) describes procedures that cannot be billed together.

E/M Documentation:

Understanding E/M services, including the associated documentation and coding, is necessary not just to take care of patients, but to have accurate documentation and medicolegal compliance, and to ensure appropriate reimbursement. The three elements of E/M

coding are History (Hx), Physical Examination (PE), and Medical Decision Making (MDM). Formerly, it was important to document particular elements in order to bill higher codes (for example, a review of at least 10 systems was required in order to bill comprehensive codes. However, in 2025, the Medicare requirements have simplified the E/M requirements and focus mostly on medical decision making to determine the level of the bill. Therefore, it is extremely important to document the thought process an medical decision making used in your encounter, using specific documentation for how you decided on a plan of care for the patient. This is less important that documenting a complete review of systems, for example.

In order to bill an encounter, you must first choose what type of encounter you are documenting: inpatient, outpatient, observation, or consultation. Each of these patient encounters can be further subdivided. The subcategories for outpatient services are new or established patients. The subcategories for both inpatient and observation services are initial vs subsequent encounter. Lastly, the subcategories for consults are inpatient vs ED. The codes within E/M services are based on either medical decision making or time (counseling and coordination of care). The four levels of MDM are straightforward, low, moderate, and high and are determined by: the number of complex problems addressed, the complexity of the data reviewed, and the risk of complications in the form of morbidity, and mortality. Again, it is extremely important to document carefully your medical decision-making process in order to avoid denials on your highest encounters.

For critical care, you must document that you have directly cared for a patient where one or more vital organ systems are acutely impaired, and that there is a high probability if imminent life threatening deterioration of the patient condition. You then must document that you had to make highly complex decisions to treat those organ failure impairments and that this required your full attention.

ED Management:

The initial evaluation of a trauma patient in the emergency department includes the primary survey, secondary survey, and AMPLE history. For the highest E/M codes, comprehensive history, physical, and decision making must be documented. This includes a multisystem evaluation including physical examination and evaluation and interpretation of laboratory and imaging findings. If patients are extremely ill and unable to provide required E/M information, the surgeon must document high-complexity decision making including (1) the number of diagnoses, (2) the complexity of data reviewed, and (3) the level of risks, complications, morbidity, and mortality to the patient (Table 5).

Critical Care:

Critical Care documentation and billing are important parts of any acute care surgeon's practice. The CMS defines it as a time-based practice involving high complexity decision making of one or more organ systems with care provided in any location including outside of an ICU. Resident time cannot be billed but can be used as justification for critical care services that are provided, but resident documentation or APP documentation can be attested with the

additional medical decision making, justification for critical care, and time spent by the attending physician. Stand-alone documentation can also be used but must document all of the elements required for critical care billing (Figure 1).

Time based critical care time must be performed in close proximity to a patient and NOT include procedures or resident teaching. This time can be an aggregate of discontinuous time but cannot include care, workup, or consults performed outside of the ICU. In order to qualify for critical care billing, 3 elements must be documented: (1) diagnosis of one or more critical illnesses, (2) performance of critical care services, and (3) meeting threshold for critical care block time (Table 6).

For critical care services from 30 to 74 minutes, 99291 should be reported. Starting in 2024, an entire additional 30 minutes must be reported in order to bill 99292, so you cannot bill 99292 until you have spent 104 minutes at the bedside. At minute 104 and every 30 minutes thereafter, report an additional unit of 99292.

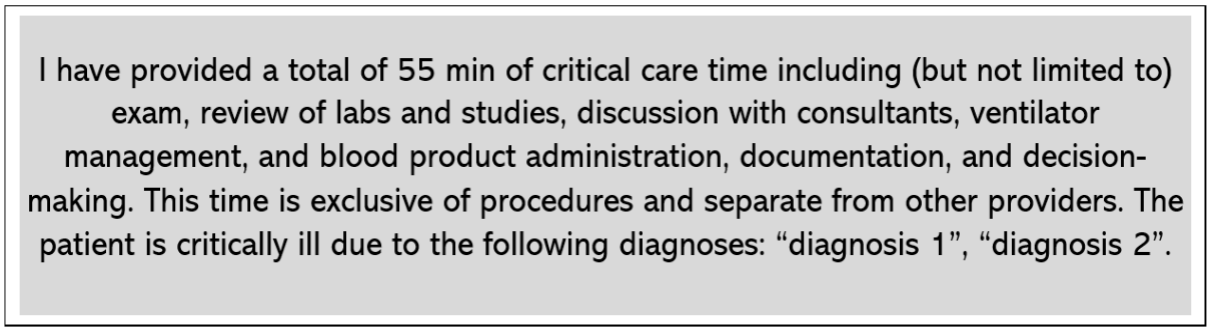


Figure 1. Example Critical Care Statement

<u>Misconceptions</u>:

There are a number of common misconceptions that lead physicians and coders to under-bill for their procedures, or to bill incorrectly, leading to denials. For critical care, one common misconception is that this care needs to be contiguous, it can be provided in a disjointed fashion to add up to a total of 30 minutes. The time spent in sign out and documentation also counts to the critical care time. Second, patients do not need to be critically ill to receive critical care because the patient’s condition is not an element of critical care billing.

Another, newer, concept is that of split-shared billing. In this case, another licensed practitioner, such as an Advanced Practice Provider (APP), can add their cumulative time to the physician’s time, possibly reaching the threshold of 104 minutes, which is required to bill a second critical care time block (99292). The provider who spent the substantive portion of the time bills the entire E/M for both providers. Substantive portion is more than half of the time. Therefore, the physician must attest for more time than the APP in order for it to be reimbursed at the physician rate, rather than the APP rate, which is 0.85 on the dollar of the physician rate. For example, if a physician attests 60 minutes and the APP attests 59 minutes,

the total time is 119 minutes, and the pair would bill 1 unit of 99291 and 1 unit of 99292 at the physician rate. If reversed and the APP attests 60 minutes and the physician 59, the pair will still bill 99291 and 99292 but the entire bill will be paid at the APP rate since the APP time was greater than the physician.

Billing with Trainees:

When attesting resident notes, your attestation must state that you were present and participated in the management of the patient. While there is no defined timeframe for which your documentation must be completed, generally, any medical document should be signed within 48 hours of the provided service.

For minor procedures such as a laceration repair, there must be documentation that the teaching physician was present for the procedure. However, for more complex procedures, the teaching physician must be present, at minimum, for the critical portions of the case.

Modifiers:

Modifiers are critical to identify variations in the expected billing pattern, such as billing within the global period or billing two codes on the same day. It is useful to bear in mind that a computer is reading most of the bills that are submitted for payment, and if there is an error in the algorithm, the computer will deny payment or force into manual review. Modifiers, therefore, are critical in explaining why you may have an unexpected set of codes on a given day. Some common examples are listed below.

- *25:* This modifier is added to an E/M code when a minor procedure is performed the same day, such as a central line, laceration repair, arterial line, splinting of a fracture, etc.
- *57:* Decision for surgery. This modifier is added to an E/M code when a surgery or complex procedure (endoscopy, complex laceration repair, etc.) is performed on the same day as an E/M code. It indicates that you saw the patient, determined they needed surgery, and then operated on them on the same day.
- *59:* Distinct procedural service. Some procedures have expected associated procedures. For example, if you do a thoracotomy, it is expected that you would place a chest tube, But if you place a chest tube in the other hemithorax, you can use -59 on the chest tube code to indicate that it was a distinct procedure from your thoracotomy
- *24:* 24 is used when an E/M is being billed in the global period from a surgery, and indicates you are managing issues not related to the original operation. This is commonly used in trauma when you may have done a laparotomy on a patient, but are also managing fractures, pain, etc.
- *FT:* FT is the same modifier as 24, but for critical care. Beginning in 2023, FT is used for critical care services in any surgeon's global period, not just your partner's. For example, if a patient presents with a traumatic brain injury and is operated on by neurosurgery, you would use -FT if you are caring for that patient in the ICU, even though you did not perform the surgery. It is critically important that all intensivists (including medical intensivists) use an FT modifier when billing critical care in the global period of any surgery performed by any surgeon.
- *78:* Unplanned return to the OR should be considered the "complication" code. This would be used if a patient is bleeding, has a dehiscence, leak or other reason they need to return to the operating room that was not anticipated at the time of the index operation.

- *79:* 79 modifier is placed on any procedure that is done in the global of another operation that is unrelated. For example, if you did a laparotomy on a patient and 3 days later need to place a central line, you would use -79 on the central line bill.
- *58:* Staged procedure: Staged procedures are used when you return to the operating room in the global for another operation, but in planned fashion. You would use this code, for example, in the takeback procedure or abdominal washout for patients intentionally left with an open abdomen. Because the laparotomy codes for both operating room trips include incision and closure, you also used reduced services in that case (modifier -52); you are reimbursed for both operations, but at a lower rate than a full operation since the procedure was not completed at the index operation.
- *22:* Unusual procedural services. This is difficult to get reimbursed and requires meticulous documentation. This is used when the procedure was exceptionally difficult for some reason. For example, if you have a patient who requires enterectomy for adhesive obstruction, but is morbidly obese, or has dense adhesions from multiple operations, you can use this code. You must document why it was difficult - for example, "There was extensive adhesive disease requiring in excess of 3 hours of adhesiolysis."

Helpful Resources:

1. Esposito T, Reed R, Adams RC, Fakhry S, Carey D, Crandall ML. Acute Care Surgery Billing, Coding and Documentation Series Part 1: Basic Evaluation and Management (E/M), Emergency Department E/M, Prolonged Services, Adult Critical Care Documentation and Coding. Trauma Surg Acute Care Open. 2020;5(1):e000578. Published 2020 Nov 11. doi:10.1136/tsaco-2020-000578

2. Esposito T, Reed R, Adams RC, Fakhry S, Carey D, Crandall ML. Acute Care Surgery Billing, Coding and Documentation Series Part 2: Postoperative Documentation and Coding; Documentation and Coding in Conjunction with Trainees and Advanced Practitioners; Coding Select Procedures. Trauma Surg Acute Care Open. 2020;5(1):e000586. Published 2020 Nov 11. doi:10.1136/tsaco-2020-000586

3. Esposito T, Reed R, Adams RC, et al. Acute Care Surgery Billing, Coding and Documentation Series Part 3: Coding of Additional Select Procedures; Modifiers; Telemedicine Coding; Robotic Surgery. Trauma Surg Acute Care Open. 2020;5(1):e000587. Published 2020 Nov 11. doi: 10.1136/tsaco-2020-000587.

4. Centers for Medicare and Medicaid Services. Medicare Claims Processing Manual, Chapter 12 - Physicians/Nonphysician Practitioners, Section 30.6.12: critical care visits and neonatal intensive care (codes 99291 - 99292); L. Critical care services provided during preoperative portion and postoperative portion of global period of procedure with 90-day global period in trauma and burn cases, p. 73. http://www.cms.gov/manuals/downloads/clm104c12.pdf. Accessed September 15, 2018.

CHAPTER 9:
Preparing Your Promotion Packet

Joshua S. Ng-Kamstra, MDCM, MPH, FACS
and George C. Velmahos, MD, PhD, FACS

Background:

In academic surgery, the transitions between Instructor, Assistant Professor, Associate Professor, and Professor are important moments of professional recognition. Academic promotions have significant implications for salary, eligibility for grant funding, and reputation. Despite the discrete nature of these transitions, viewing a promotion pathway as a continuous process from initial hire to full professorship can reduce the stress of applications for promotion and increase the likelihood of success.

Upon Taking a New Job:

It is critically important to familiarize yourself with the nuances of the relationship between clinical and academic entities (hospital and medical school) in your environment, and the roles that individual surgeon-leaders play within each. You may be accountable to different individuals for your clinical and academic performance. It is important to meet with these individuals early so that they understand your goals and secure the necessary resources for you to succeed. If you do not already have ties within the institution, your chief or chair can help you find a (formal or informal) committee of mentors who can provide you with a strategic plan and day-to-day direction.

You will need to be familiar with the promotion pathways and criteria at your institution. Many institutions offer a "clinician-scientist" track focused primarily on research, a "clinician-scholar" track focused primarily on clinical work, and a "clinician-educator" track focused on medical education research and teaching activities, or variations thereof. It is important to be objective and practical when selecting a track: for example, while you may enjoy the conduct of research, you may find that being held to the funding and productivity standards inherent to a "scientist" track is not sustainable alongside your clinical interests. It is important to format all your materials, including your CV, in the manner expected by the institution. Consider using online tools (e.g. EasyCV) to simplify this process. The initial appointment (usually as Instructor or Assistant Professor) tends to be more straightforward than subsequent promotions.

In Early Attending Life:

Joining and participating in professional organizations such as AAST, EAST, and ACS can provide avenues to conduct work of regional or national importance. Within your institution, you may be presented with abundant opportunities to advance your career, or you may need

to seek out resources beyond the local ones. Both situations come with advantages: the former will expand your comfort zone, and the latter can allow you to produce, unhindered, in a specific niche of great meaning to you. Regardless, it is important to regularly reevaluate whether your effort is aligned with your values. While productivity measures (and primarily first- or last-author publications and grant funding) are essential to successful promotion, work that you find meaningful brings joy, purpose, and motivation. This will be readily apparent in your promotion packet.

Update your CV regularly; you may find it helpful to set a weekly or monthly reminder. Alternatively, have a cloud-accessible document that allows additions in real time whenever an activity is completed or an accomplishment announced. Remember to log all activities, including those that may not fit neatly within your institution's CV format. Keep a separate document for these activities and use it as a reference in any free-text description of your work in your promotion material. Further, keep organized files of all relevant materials, including fliers from talks, evaluations from students, and PDFs of publications. This is much easier to do prospectively.

Preparing for Promotion:

Monitor how your activities align with promotion criteria, and about two years prior to your planned promotion application, formally assess strengths and weaknesses. If you identify gaps that you are unable to fill on your own, speak with your mentors who can guide you to the necessary opportunities. Review your institution's website carefully for any changes in process or promotion criteria, and if your institution offers short courses on promotion, attend these. Faculty development officers can otherwise be an invaluable resource to ensure that your application is optimized. They, along with your chair and your mentorship committee, can provide insights into your readiness for promotion. Do not rely only on your own instinct: this could either precipitate a premature application or unnecessarily hold you back. Your mentors and others who have recently been through the promotion process may be aware of pitfalls or biases within your institution and help you implement strategies to mitigate these. Finally, while a well-rounded portfolio is critical, it remains true that the publication record is the most critical aspect in the process of promotion. If you have projects that are close to being done, this is the time to get them across the finish line.

Before assembling your packet, request others' (successful) promotion packets. These will provide not only a sense of expectations, but also the language that should be reflected in your packet. Your application should tell the story of your academic journey. Find the common throughline in your work that unites what may be disparate activities. You should be able to summarize your CV in 1-2 sentences that represent the core narrative of your academic life, revealing who you are, your context, the primary problem you are solving, the impact you have had, and the future you are building. Each section should demonstrate evidence that you have met (or exceeded) the promotion criteria and reflect the bigger story.

Letters of Reference:

In demonstrating one's local, regional, or national reputation, letters of reference are crucial. Bear in mind that these letters often involve "arm's length" individuals who know of you but have not mentored you or worked with you directly. Importantly, you should not contact these individuals yourself, unless specifically asked to do so by your department. To facilitate objectivity in letter-writing, the process of requesting letters is often led by academic leaders in your department.

Summary:

Creating a promotion packet can be daunting, but feels more manageable if considered an ongoing activity that simply showcases the impact of your work. Finding work that is meaningful to you and dedicating yourself to it will take you far, and thoughtful preparation will push you the rest of the way to successful promotion.

Helpful Resources:

Alam, H. B. Promotion. *Clin. Colon Rectal Surg.* 26, 232–238 (2013).

This article provides insights into the promotion process and advice for achieving the relevant milestones.

Chen, H. Making Your Packet: Preparing for Promotion and Tenure. https://www.aasurg.org/wp-content/uploads/2017/10/Chen-Preparing-for-Promotion-and-Tenure.pdf. Accessed 11/18/2023

A presentation delivered by Dr. Herbert Chen for the Association for Academic Surgery. Includes information on documentation required for specific promotion criteria.

EasyCV. https://www.home.easycv.me. Accessed 11/18/2023

Online tools can simplify the process of continuously updating a CV and formatting it to institutional standards. This tool is best optimized for the Harvard Medical School CV format.

Institutional promotions webpages

The most relevant promotion webpage will be your own institution's, but if you are not yet employed by a specific institution and wish to peruse examples, see https://facultyhandbook.hms.harvard.edu/ *or* https://www.feinberg.northwestern.edu/fao/for-faculty/promo-tenure/packet/index.html*.*

Mbuagbaw, L., Anderson, L. N., Lokker, C. & Thabane, L. Advice for Junior Faculty Regarding Academic Promotion: What Not to Worry About, and What to Worry About. *J. Multidiscip. Healthc.* **13**, 117–122 (2020).

Another good read for junior faculty addressing expectations for and strategies to achieve promotion.

CHAPTER 10:
Starting a Private Practice

Carlos H. Palacio, MD, FACS and Christian Martinez, PhD, MPH, MHA

Background:

We would like to start by saying we have no financial disclosure and there will be minimal data driven in this chapter. These are the experiences and recommendations of a mid-career trauma surgeon in their journey of navigating the community world, as well as some advice from a senior administrator.

One of the best ways to find a community job is through recommendations by friends, colleagues, and peers. Attending the different in-person meetings and virtual job fairs by EAST, APDS and AAST might be the best way to connect with other surgeons in the community. There are also webpages that offer a variety of jobs and are very useful. An example of this is doccafe.com.

Overview:

Some considerations before starting your search are to distinguish the different types of community jobs out there. Are you joining as an employed physician of a healthcare network or are you joining a private group with partners? Also, ask yourself about the type of practice you are interested in joining; is it an acute care surgery job?; does it include trauma and ICU or is it a combination of all the above? Ask how many hospitals you will be covering and if it will be 24- or 12-hour shifts.

Once you have gone through the interview process and both you and your prospective employer decide to move forward, you will be given a letter of intent with a compensation offer which marks the start of the negotiation process. As a physician in training, it would be wise to seek legal counsel when you are ready to review a binding employment agreement.

Contract Negotiation:

Everything is negotiable in a contract. Items that become important are the malpractice insurance including the "tail," meaning is your employer willing to pay malpractice insurance if you decide to leave early? Are you going to have a base salary, or just production or a combination? It's very important to clarify this point beforehand including your base and bonus RVU targets.

Another item to negotiate is your term which is how long the duration of the contract is. An additional consideration is whether your contract automatically renews after the initial term. Contracts also typically have noncompete covenants which range from 1-2 years and involve a specific distance radius from the office or facility where you practice. Other items to negotiate

include a relocation/retention bonus, quality measures, number of calls, and call compensation. Benefits such as PTO, CME, licenses/dues, holidays, sick leave, medical, dental, retirement, and joint venture opportunities should also be considered.

Compensation:

The majority of the health care systems and groups in the community use the Medical Group Management Association (MGMA). This organization assists with physician practices and sends out a yearly survey to assess physician compensation by specialty. This report is released every year and includes the previous year's data. This report is broken down by regions in the country in addition to physician practice and hospital/health care networks. The data includes total compensation, number of RVUs generated, average compensation factors, and the average number of collections. Examples of these tables broken down by salary and RVUs are included in table 1 and 2. To interpret this data, for a median trauma surgeon salary of $509,051, you would need to produce 6,006 annual RVUs.

	All Practice Types							
Provider Specialty	Ind Count	Mean	Std Dev	10 % tile	25 % tile	Median	75 % tile	90 % tile
Surgery: Transplant-Heart	23	$558,160	$259,697	$290,591	$466,506	$511,301	$549,859	$949,517
Surgery: Transplant-Kidney	21	$464,647	$159,940	$354,706	$363,750	$436,301	$501,505	$686,503
Surgery: Transplant-Liver	18	$492,969	$126,783	$342,417	$400,500	$487,794	$549,256	$691,988
Surgery: Trauma	551	$521,565	$205,039	$294,096	$429,994	$509,051	$610,261	$743,787
Surgery: Trauma-Burn	23	$547,750	$260,326	$249,823	$400,000	$552,181	$623,691	$788,636

Table 1. MGMA 2022 Report of 2021 Salaries

	All Practice Types							
Provider Specialty	Ind Count	Mean	Std Dev	10 % tile	25 % tile	Median	75 % tile	90 % tile
Surgery: Transplant	66	6,511	3,365	2,440	3,752	6,046	8,661	11,025
Surgery: Transplant-Heart	19	6,728	2,490	3,972	5,184	5,863	7,365	11,993
Surgery: Transplant-Kidney	15	4,820	1,808	2,275	2,952	4,863	6,662	7,299
Surgery: Transplant-Liver	14	6,422	2,523	3,185	4,867	5,804	8,127	10,911
Surgery: Trauma	432	6,504	3,136	2,737	4,036	6,006	8,344	10,940
Surgery: Trauma-Burn	11	7,948	1,770	5,057	6,147	8,401	9,483	10,168

Table 2. MGMA 2022 Report of 2021 RVUs

Another compensation model that is often employed is a "straight production" model where the RVUs generated by the physician are multiplied by the compensation factor. The compensation factor is a dollar value that varies by specialty. In this model, all RVUs generated

by CPT codes are selected and are multiplied by the compensation factor to determine your salary.

Collections is also another common performance indicator in physician practices. If you receive a contract that includes physician compensation based on practice collections, then for every dollar that the practice receives, the physician gets a percentage of that collection. For example, if the contract reads that the incentive compensation is 50% of professional cash receipts, then for all services performed by the physician where professional services are billed and collected above the annual salary amounts, this will be given back to the physician as incentive bonus payment. This type of practice is volume dependent and thus it is important to have good relationships with primary care physicians as they will be a main source of referrals for you.

Some Final Advice:

Another important aspect of any community job is your partners. Having great partners will make your life easy. Talk to people who left that practice, they might be able to give you some red flags or discuss some opportunities as well. Do some research about the facility, the climate, and the community in general. Finally, with a sense of caution and despite your salary goals, do not live above your means, at least not at the beginning of your career as all too many times we see physicians in debt and financially struggling to thrive. Please understand that building a career is up to the physician and understanding the dynamics of the business side of health care is also our responsibility. Take these recommendations with caution, this has been our experience. At the end of the chapter, we have added some considerations and questions that might be of use during your interview process. Good luck and welcome to the community!

Questions to Consider:

Program

1. Are you looking for trauma surgery? General Surgery? Combination of both?
2. Is it a single hospital/facility or a multi-facility health system?
3. Will you do call coverage in a single facility or in multiple facilities?
4. What trauma level designation is the facility?
5. Does the facility/system have multiple subspecialists?
6. Is the facility/system part of Graduate Medical Education (GME)? Will you be part of the faculty?
7. What is the work culture of the facility? Is it physician friendly?
8. Does the program have any APPs? Will you be supervising APPs? How many?
9. Will there be a mentor or physician lead for the program?

Location/city

1. Does the location/city have convenient direct flights to preferred destination(s)?
2. What are the demographics of the city?
3. Is it an underserved/underrepresented area?
4. Does the location/city have suitable neighborhoods, homes, rental properties?
5. Does the location/city have adequate/competitive school for children?
6. What are the recreational events, activities, places in the area?

Employed

1. Who is the employer? Physician owned? Corporation? Private practice?
2. Why is there a vacancy? How long has it been open for? What is the physician turnover rate?
3. What are the leapfrog and HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) scores for the facility?
4. How is patient experience and patient satisfaction measured? What are the survey questions?
5. What is the timeline for the contract process? How soon can you start?
6. Does the facility have adequate physician coverage?
7. Will you have an outpatient clinic or elective practice?
8. How many days of call coverage are you responsible for per month?
9. How many of those call coverage days are nonpaid/paid?
10. What is the rate of call coverage per day?
11. What is the call coverage shift per day? 12 hours or 24 hours?
12. What is the base pay? Is it guaranteed and for how long? What source is used for compensation offer? MGMA or other?
13. Is there a sign-on bonus? What is the amount? Is it prorated burn-off for repayment if the initial term is not fulfilled?
14. Is there relocation reimbursement? What is the amount? Is it prorated burn-off for repayment if the initial term is not fulfilled?
15. Is there an opportunity to renegotiate a contract during the initial term or does it only occur after the initial term is completed?
16. Is there a retention bonus offered after completion of the initial term?
17. Is there an opportunity for student loan forgiveness?
18. What is the productivity conversion/compensation factor and what is the threshold for bonus potential?
19. Are there any quality measures as part of bonus compensation for benchmark goal attainment? Will data be shared monthly with physician regarding goal attainment and opportunities for improvement or review of cases?
20. What are the licenses/dues/membership allowances? Are they prorated per calendar year or are they per contract year?
21. What is the CME allowance per year? How many CME days are provided aside from PTO/holidays? Are there any CME limitations in traveling overseas for conferences? Are they prorated per calendar year or per contract year?
22. Is there a noncompete? For how long? What geographical distance from facility/practice? Is there a buyout clause?
23. What is the termination clause? What are the with cause and/or without cause terms and reasons for termination?
24. What are the notice terms by physician, by group/employer or is it standard 90-day term notice for both parties?
25. What is/are the PTO/Holiday/Sick leave policies, requirements, and amounts/days/hours? Are the amounts/days/hours prorated per calendar year or are they contract year?
26. Is malpractice covered? What are the coverage limits $1M:$3M? Does physician have attorney/counsel access? Does the employer have the right to settle claims on your behalf?
27. What other benefits are offered and available? Medical, dental, vision, short term disability, long term disability, 401k, stock options, joint ventures?
28. What are the leadership opportunities for the physician?
29. Is coding inhouse or remote? Is there coding support, auditing, and training provided?

30. What EMR is used at facility? Is it the same as the clinic? Do they have dictation software such as Dragon Mic?
31. When do you get an APP to support rounding, clinic, procedures, etc.?
32. Does contract state limitations regarding outside activities, moonlighting, locums, and/or other items such as writing a book, conducting course reviews, academic appointments, and blogs or other forums? Will you be allowed to participate and receive compensation for outside external activities?
33. What financial reporting is shared with physician? What cadence is it produced and provided to physician?
34. What are the physician's note completion requirements, expectations, and contractual obligations?
35. Are there contractual limitations to split-shared or incident to billing?

Contracted (1099 or PSA)

1. Same questions may apply; however, you may be responsible for malpractice, benefits, and other items not covered as contracted employees.

Going into Private Practice

1. Are you creating your own entity/company? PLLC, LLC, PA?
2. What is the name of the company?
3. Are you considering renting/purchasing/leasing office space?
4. What are the terms of a lease/rental agreement?
5. What are the responsibilities of the tenant/landlord? Utilities? Repairs?
6. What is the fair market value for the square footage in the market area?
7. What is the design and operational workflow of your clinic space?
8. Will you rent/lease/purchase equipment?
9. What EMR/HER will you purchase?
10. What staffing model do you need?
11. What are the hours of operation?
12. Will you do in-house billing, or will it be outsourced to a third party?
13. What billing clearing house will you use to ensure that your claims are clean and going through to the payors?
14. Do you have a person to help with insurance payor credentialing? Completion of applications for payor billing?
15. Do you have a payroll system? Or use a CPA?
16. What benefits will be offered to employees?
17. Do you have job descriptions for employees?
18. Do you have wage grades for employee positions?
19. Do you have insurances? Personal, business, malpractice?
20. Do you have standard operating procedures for the clinic?
21. Do you have office policies for the clinic?

Helpful Resources:

1. Medical Group Management Association (MGMA): 2022 Provider Comp 2021 Data. (2023). https://www.mgma.com/datadive

CHAPTER 11:
Insurance Policies

Dina M. Filiberto, MD, FACS

Background:
This chapter discusses various types of insurance that you may encounter as you begin your career. Many of these types of insurance are important to consider once you have completed your training as you will be able to financially contribute to them going forward.

Health:

- Different types: HMO, PPO.
- If high deductible, will have access to Health Savings account (HSA).
- Consider HSA if healthy and no expected medical costs.
- Able to invest your HSA contributions.
- Triple tax benefit:
    - Contributions are pre-tax, which lower your overall taxable income
    - Money grows tax-free in the HSA account
    - Withdrawals are tax-free if used for a qualified medical expense
- You don't have to use the money in the HSA account, allowing it to grow like an investment account. After the age of 65, withdrawals for qualified medical expenses remain tax-free, and withdrawals for non-medical expenses are taxed. This is sometimes referred to as a stealth IRA.

Car/Home/Renter's:

- Should increase your car insurance coverage to protect your vehicle and your assets if you are at-fault.
- State requirements vary but consider more than the minimum requirements as well as collision coverage, comprehensive coverage, and uninsured motorist coverage.
- Recommend $100,000/300,000/100,000 per person for bodily injury liability/per accident bodily injury liability/property damage but even better is $250,000/500,000/250,000.
- If you purchase umbrella insurance, you will be required to purchase a certain amount of auto and homeowner's insurance.

Umbrella:

- Provides coverage when your homeowners, auto, or watercraft insurance policies are exhausted.
- Covers policy owner and members of family/household.
- Covers injury, property damage, certain lawsuits (not medical malpractice), personal liability. when you are at-fault. Does not provide coverage for your own property.

- Umbrella insurance is generally inexpensive to obtain.
- Recommended if you own property, recreational vehicles, have a pool, are a landlord, have an inexperienced driver in your home.
- Policies are sold in $1 million-dollar increments.
- Should purchase at least $1 million and increase your policy to equal your net worth. If you have any of the above listed risk factors, you should purchase more than a $1 million policy.

Life:

- Most employers provide a small life insurance policy.
- Consider purchasing additional policies if you have a family or dependents, especially if you are the primary income-earner in your household.
- Policies may be "Term" which covers a set period, e.g. 20 vs 30 years or "Permanent/Whole Life", which is active as long as premiums are paid
- Sold in increments that depend on the total cost of the policy and the provider

Disability:

- Thought of as more important than life insurance since you are more likely to use the policy.
- It is expensive (expect 1-3% of salary).
- Many employers offer disability insurance, although it is not own-occupation or specialty-specific.
- Recommend purchasing additional own-occupation, specialty-specific disability insurance as soon as you can to secure as low of a rate as possible. Only several companies can provide own-occupation policies: Mass Mutual, Ameritas, Guardian, Principal, The Standard.
- If you have pre-existing conditions, make sure your agent is aware to shop before submitting a policy. A rejection will likely bar any policy in the future.

Retirement:

- You should max out all available retirement plans to capitalize on compound interest and lower your taxable income.
- Usually, you will have a 401K or 403b depending on the type of organization you work for. Contribute to this monthly and your organization with match a certain percent. The contribution limit for 2023 is $22,500 (your employer may match an additional percentage).
- You may also be able to contribute to a 457. This fund gives you the opportunity to contribute an additional $22,500 in 2023.
- Learn about the backdoor Roth IRA – in 2023, you and your spouse can contribute an additional $6500/person each year assuming conditions are met

Malpractice:

- Professional liability insurance comes in two forms: occurrence and claims-made

    - Majority of policies available are claims-made
- Claims-made policies provide coverage only for incidents that occurred and were reported while you were insured with that specific carrier
    - The incident and filing of the claim both must happen while the policy is active
    - If you discontinue a claims-made policy, you are not covered for any suits that are filed later unless you have "tail coverage"
- Occurrence policies provide lifetime coverage for incidents that occur while the policy was in effect, regardless of when the claim is filed
- Claims-made policies are initially less expensive than occurrence policies because the potential for claims builds slowly as policy years accumulate
- Most policies offer limits of coverage ranging from $100,000 to $300,000 and $1 million to $3 million
    - 1st number is max amount the insurance company will pay per claim during policy period (1 year)
    - 2nd number is max amount the company will pay for all claims during the policy period

Helpful Resources:

1. Retirement savings advice for physicians. https://www.medicaleconomics.com/view/retirement-savings-advice-for-physicians
2. Retirement planning for doctors. https://www.physicianfamily.com/retirement-planning-for-doctors

Nothing herein is intended to provide legal advice, as malpractice laws vary by jurisdiction. AAST makes no representations regarding compliance with state or federal law, and all readers are encouraged to seek advice of local counsel regarding applicable malpractice laws.

SECTION III:
Navigating Your Early Career as an Administrator

Section Editor: Jarrett E. Santorelli, MD, FACS

CHAPTER 12:
Getting Involved in Hospital Committees and Quality Improvement

Paul Albini, MD and Raul Coimbra, MD, PhD

Starting your first job is exciting, and you will now be responsible for the clinical decisions affecting patient outcomes. Patient care comes first, and you will begin to build confidence in your independent intraoperative skills and decision-making. Additionally, you may be called upon by your division chief, department chair, or other administrators to participate in hospital committees. Participation in hospital committee work is important for several reasons. Many committees participate in decision-making that affects the Acute Care Surgery division, if not the whole Surgery Department, and they must be represented well.

There are many different committees, ranging from the mundane "in-hospital Tylenol" Committee to the longstanding IRB committee, the Operating Room Committee, the very important Performance Improvement and Patient Safety Committee, and everything in between.

Here are some facts to know and some tips and tricks on how to successfully participate in a committee:

1) **How to get involved in a committee:**

If you develop an interest in a specific area or committee that you hear about, it is a good idea to meet with your chief and discuss if this would be worthwhile from their perspective before making the time commitment. It is essential to ascertain that your participation on the committee is aligned with the vision and mission of your division or department so that you can make substantial contributions to the hospital processes that impact the care delivery of your program.

2) **What to do if you are "volunteered" to serve on a committee:**

You may have thoughts about which committees you want to serve – those that best match your interests and help achieve your goals, the goals of your program, division, or department, and ultimately, those that will positively impact patient care, quality, and safety. However, in the beginning, you will more likely be "volunteered" to serve on committees with vacant positions in which your chief or chair wants surgical representation. This may not come in the form of a statement but instead asked in question form. "Do you want to join Committee X?" Some of these offers may match your interests, and some may not. When starting, it is wise to say yes.

3) How to be a good citizen:

Initially, it is important to view any asks from the lens of "good citizenship." You want to demonstrate that you can spend time and help your division or department through such participation. We recommend saying yes with a smile, even if you are not excited about a particular committee you are asked to join.

4) Demonstrate Dedication:

Participating in a committee you "volunteered" for but were not initially interested in can be even more important than one you wanted. This allows you to show your chief and hospital administrators that you and your program are invested in helping improve processes and systems within the hospital. More importantly, you will be able to meet and network with new colleagues from different departments – this can help you throughout your tenure.

5) Actively Participate:

If you actively participate and do quality work, your efforts will be noticed, and other opportunities may arise. After putting in time and demonstrating hard work, thoughtfulness, great insight, and elaborate strategies, your opinions and positions on relevant topics will resonate better, particularly when you have projects in mind that require the buy-in of individuals from other departments and the administration.

6) Subcommittees:

Subcommittees are increasingly popular and tend to be the workhorses of a larger committee. These are great opportunities to help work on projects that a committee oversees. By raising your hand and putting in the hard work, you will further demonstrate your commitment to the organization and show good citizenship.

7) Know when to say no:

It is hard to say no, particularly at the beginning of your career. You are just trying to develop into an independent surgeon and create a reputation as a solid clinician. You may also have research and educational aspirations and want to start a family. Time management is critical to personal and professional success. When asked to participate on a committee, there is likely a more significant piece of the puzzle you are filling for your department. Saying "no" without analyzing the situation and identifying the short and long-term benefits of such an appointment may give the impression you are not a team player. However, if you are unable to genuinely participate in good faith, you should be honest with the person asking for your participation and explain that you are unable to dedicate the time and briefly touch on why. It may not be looked favorably upon if you say "yes" but then do a poor job because you could not commit to active participation. In this situation, it may be wise to explain that it is not a good time, and we recommend suggesting an alternate time frame in the future.

8) When to put more on your plate:

Adding too much to your plate in the beginning is unwise. It is best to do an excellent job with one committee and demonstrate your active participation before joining another. Once you have spent some time on a committee completing a project, you will be able to learn how

much time is required for these extra-curricular activities. Again, it is essential to be honest with yourself and your chief. You may want to participate in 10 committees but only have the time to do an excellent job in 1 or 2.

9) How to Participate in Quality Improvement Projects

Generally, participating in quality improvement projects is a requirement in most departments and for board certification. As acute care surgeons, the best way to choose a project is to make sure you attend your divisional EGS or Trauma PI meetings and Mortality and Morbidity Conferences. Most every "opportunity for improvement" discussed in those meetings can be turned into a project to improve performance. Write down your ideas during these meetings, keep a running list, read about the topics, search the literature to learn what has and has not been done in that domain, and then meet with your chief and discuss your idea for the performance/quality improvement project. It is best to have a proposal written before your meeting to outline the problem, the gaps in knowledge, and your proposed project.

Participating in hospital committees and quality improvement projects is important for developing your administrative skillset as a junior attending. They are also often fun and rewarding. We hope you found this chapter helpful as you start your career.

CHAPTER 13:
Getting to Know the Trauma Verification Process

Todd Costantini, MD, FACS and Lisa Kurth, MD

Background:

In American history, the first national recognition of utility for uniform trauma care was recognized by Abraham Lincoln with a formalized process to care for injured patients during the civil war. There was a drive to create collective information to recognize best practices in trauma care. This evolved and in 1913 the American College of Surgeons was founded. In 1918 the Hospital Standardization Program was created which ultimately became the Joint Commission. In 1922, the Committee on Fractures was created which in 1950 evolved into the Committee of Trauma.[1] After the American involvement in warfare it was noted that "experts returning from Korea and Vietnam publicly asserted that, if seriously wounded, their chances of survival would be better in the zone of combat than on the average city street."[2] These collective historical concerns have driven the development of trauma systems and trauma center designation and verification.

Trauma is currently the leading cause of death in patients between age 1 and 45 and accounts for more deaths than cancer and heart disease combined.[3] Traumatic injury is not random and should be viewed as a disease with predictable risk factors and patterns. Further, there are clear trends related to trauma outcomes based on geographic location, socioeconomic disparity, and race.[4] Trauma centers have been shown to be associated with improved outcomes, where the risk of death is lower in trauma centers compared to non-trauma centers.[5] In addition, proximity to a trauma center can decrease injury related mortality further highlighting the importance of trauma systems and trauma centers.[6]

Oversight of the Trauma Center:

The Trauma Medical Director (TMD) and Trauma Program Manager (TPM) are responsible for the oversight of the trauma program including the development of policies and protocols. The TMD is responsible for oversight of the trauma program including the multidisciplinary care of trauma patients, the quality and performance improvement program of the trauma center, and ensuring adequate resources are available to meet the needs of injured patients 24 hours a day, 7 days per week. This includes the development of trauma protocols and guidelines to ensure consistency in clinical care. There is a focus on clinical improvement processes and clinical education of providers and trainees in the trauma center. The TPM is responsible for the day-to-day oversight of the performance improvement program, including the supervision of trauma registrars that extract data for the trauma registry. The TPM also provides oversight to the nursing care and ancillary services that provide care to patients at a designated trauma center. The TPM works hand in hand with the TMD to ensure

that high-quality patient care is delivered effectively and as expected per the trauma center protocols.

Resources for the Optimal Care of the Injured Patient:

This the handbook for standards of care in trauma care. In order to be verified as a trauma center, the trauma program must clearly demonstrate compliance with the definitions and requirements laid forth in the Resources for the Optimal Care of the Injured Patient manual. This manual is published by the American College of Surgeons Committee on Trauma and is updated frequently to provide clear and measurable standards that should be achieved by trauma centers to achieve verification.

Preparing for the Verification Visit:

The verification process occurs on a 3-year cycle. The purpose of ongoing verification review is to ensure that the trauma center designation is meeting the standards of the designated level of trauma care. In advance of the verification visit, an online pre-review questionnaire (PRQ) is completed to allow the reviewers an opportunity to evaluate the capabilities, volume, and core metrics for the trauma center. The TPM and TMD also ensure that materials needed by the reviewers are prepared for the visit. A significant focus of preparing for the verification visit includes compiling patient charts in various categories to demonstrate not only processes of care but also to demonstrate how the trauma center's performance improvement program functions.

Performance Improvement Program:

Performance improvement is performed at all trauma centers to ensure prompt, clinically appropriate care is being provided to trauma patients. High quality data is needed to measure the performance of the trauma center and to determine areas where quality improvement is needed. Each trauma center has trained trauma registrars that abstract data from each patient encounter to capture patient demographics, injury severity, vital signs, timing of care provided, interventions and outcomes. These data are captured based on strict definitions as defined by the National Trauma Data Standard (NTDS). These data allow trauma programs the opportunity to review risk-adjusted quality data that are benchmarked against other trauma centers as part of the Trauma Quality Improvement Programs (TQIP). Within each trauma center, the TPM and TMD review quality data and investigate cases in which pre-defined audit filters have been identified. Cases can undergo multiple layers of performance improvement review including discussion at regularly scheduled performance improvement meetings with the trauma surgeons, presentation to the multidisciplinary trauma committee that includes providers across the spectrum of specialties that provide trauma care, and even at the hospital level quality meeting. The goal of discussing these cases in detail is to review adverse events and to identify any potential systems or patient safety issues that need to be addressed. The goal is to obtain "loop closure" to ensure problems have not only been identified but addressed with durable improvements in patient care.

Verification Visit -What to Expect:

Two independent reviewers from the ACS Trauma Verification, Review and Consultation (VRC) Program participate in verification visits. The purpose of these verification visits is to provide an objective evaluation of the trauma care provided and to ensure that institutional resources are appropriately present to care for severely injured trauma patients. During this visit the reviewers will evaluate all components of the trauma program including institutional commitment, trauma policies and procedures, facilities, as well as the performance improvement in patient safety program. The reviewers will evaluate the submitted pre-review questionnaire and patient databases prior to arrival including independent chart review. The reviewers will meet with providers at all levels of the trauma program including: the TPM and TMD, multidisciplinary subspecialties representatives who are part of the core trauma faculty, and the injury prevention coordinator. Reviewers also participate in a hospital tour to evaluate the facilities where trauma care is provided in addition to speaking to members of the healthcare team in each of these areas. They will hold an exit interview to outline their preliminary evaluation of the program at the conclusion of the two-day visit.

Goal Breakdown:

- Read Resources for Optimal Care of the Injured Patient, 2022 Standards
- Meet with your Trauma Program Manager to understand the role of the Trauma Registrars and how the Performance Improvement and Patient Safety Program is organized at your center
- Participate in your site's preparation for an upcoming verification visit

Helpful resources:

https://www.facs.org/quality-programs/trauma/quality/verification-review-and-consultation-program/standards/
https://www.facs.org/quality-programs/trauma/systems/trauma-series/part-i/
https://www.facs.org/quality-programs/trauma/quality/verification-review-and-consultation-program/process/

References:

(1) Sugrue M, Caldwell E, D'Amours S, Crozier J, Wyllie P, Flabouris A, Sheridan M, Jalaludin B. Time for a change in injury and trauma care delivery: a trauma death review analysis. ANZ J Surg. 2008 Nov;78(11):949-54. doi: 10.1111/j.1445-2197.2008.04711.x. PMID: 18959692.

(2) National Academy of Sciences (US) and National Research Council (US) Committee on Trauma; National Academy of Sciences (US) and National Research Council (US) Committee on Shock. Accidental Death and Disability: The Neglected Disease of Modern Society. Washington (DC): National Academies Press (US); 1966. Available from: https://www.ncbi.nlm.nih.gov/books/NBK222962/ doi: 10.17226/9978

(3) Danielle A. Pigneri, Brian Beldowicz, Gregory J. Jurkovich, Trauma Systems: Origins, Evolution, and Current Challenges, Surgical Clinics of North America, Volume 97, Issue 5, 2017, Pages 947-959, ISSN 0039-6109, ISBN 9780323546904, https://doi.org/10.1016/j.suc.2017.06.011. Accessed at: https://www.sciencedirect.com/science/article/pii/S003961091730097X.

(4) Haider AH, Weygandt PL, Bentley JM, Monn MF, Rehman KA, Zarzaur BL, Crandall ML, Cornwell EE, Cooper LA. Disparities in trauma care and outcomes in the United States: a systematic review and meta-analysis. J Trauma Acute Care Surg. 2013 May;74(5):1195-205. doi: 10.1097/TA.0b013e31828c331d. PMID: 23609267; PMCID: PMC3641534.

(5) MacKenzie EJ, Rivara FP, Jurkovich GJ, Nathens AB, Frey KP, Egleston BL, Salkever DS, Scharfstein DO. A national evaluation of the effect of trauma-center care on mortality. N Engl J Med. 2006 Jan 26;354(4):366-78. doi: 10.1056/NEJMsa052049. PMID: 16436768.

(6) Hashmi ZG, Jarman MP, Uribe-Leitz T, Goralnick E, Newgard CD, Salim A, Cornwell E, Haider AH. Access delayed is access denied: relationship between access to trauma center care and pre-hospital death. J Am Coll Surg 2019;228:920.doi:10.1016/j.jamcollsurg.2018.09.015 Accessed at: http://www.ncbi.nlm.nih.gov/pubmed/30359830.

CHAPTER 14:
Getting to Know the ACS Emergency General Surgery Verification Process

Reyna T. Gonzalez, MD and Raul Coimbra, MD, PhD

Background:

Emergency general surgery (EGS) diseases are a public health burden that comprises 2-4 million hospital admissions and 4 million cases per year in the United States. Approximately 50% of operative patients encounter post-operative complications, with readmission rates as high as 15%. EGS accounts for 50% of all operative deaths. [1,2,3] Yet, no formal quality improvement program existed until recently.

Acute Care Surgery (ACS) emerged as a surgical subspecialty in the early 2000s, integrating trauma, emergency general surgery, and surgical critical care. In 2016, the AAST identified the need to create a quality improvement process and a verification program for emergency general surgery services analogous to the trauma verification program. [3] This verification program (VP) was developed in conjunction with the American College of Surgeons, concluded in 2021, and initially piloted in 5 hospitals. The program was officially launched during the 81st Annual Meeting of the AAST & Clinical Congress of Acute Care Surgery in 2022.

Oversight and Resources Required:

The Optimal Resources for Emergency General Surgery, 2022 EGS-VP Standards outlines all the requirements for an EGS Verified Program. The EGS verification program requires an EGS Medical Director, a qualified physician leader who maintains oversight and accountability for the care and quality of the EGS Program, and an EGS Program Manager who manages and coordinates the administrative and performance improvement functions of the program and supports the Medical Director. Additional personnel include a quality improvement/performance improvement coordinator and clinical data abstraction and analysis personnel, which may be fulfilled by full- or part-time positions. Hospital resource requirements include:

1. An emergency department staffed 24/7/365
2. An operating room with at least one OR staffed for EGS cases and immediately available 24/7/365.
3. ICU with trained critical care staff and personnel and a qualified physician or surgeon available 24/7/365.
4. PACU available 24/7/365 with dedicated staff trained in post-anesthesia recovery.
5. Laboratory services available on- or off-site 24/7/365 for standard analysis of blood and other body fluids.

6. Blood bank available 24/7/365 with sufficient blood products to manage urgent surgical cases.
7. Image viewing capabilities, including the ability to receive, upload, and view imaging from outside (referral) facilities.

The EGS verification program requires robust quality and process improvement with dedicated and sufficient resources to support high-quality and reliable data. Each program must clearly define its process for identifying and formally reviewing cases. The Optimal Resources for Emergency General Surgery document outlines the quality improvement (QI) initiatives and the case review process required for verification.

Finally, the EGS verification program requires a multidisciplinary committee and dedicated partnerships with other specialists, including, but not limited to, gastroenterology and interventional radiology.

Optimal Resources for Emergency General Surgery:

The first edition of the Optimal Resources for Emergency General Surgery document was published in 2022. It outlines the full complement of resources, support, pathways, and multidisciplinary composition of a program required to successfully complete the verification process.

The Optimal Resources for Emergency General Surgery also defines the scope of the EGS program. Specifically, at a minimum, the hospital must participate in the evaluation and treatment of patients with the following EGS conditions:

1. Acute abdomen/peritonitis
2. Soft tissue infection
3. Gallbladder disease
4. Gastrointestinal obstruction
5. Pancreatitis
6. Diverticular disease
7. Appendicitis
8. Acute gastrointestinal bleed
9. Perforated peptic ulcer disease
10. Incarcerated hernia

Program Administration:

The ACS does not define the administration of the EGS program. Given the wide range of hospitals and hospital systems that deliver emergency general surgery care, program administration is expected to differ across sites. However, clearly defined resource alignment, standardization of practices, and quality review processes are expected and evaluated during the verification process.

Data Surveillance Systems:

An EGS registry is essential for quality and performance improvement, education, and research. Prior to the launch of the EGS Verification Program, no formal national data repository existed. The EGS module in NSQIP was designed to bridge this gap. Adding nonoperative data collection to the module was imperative to understanding the full breadth of the diseases cared for by the EGS teams. Hospital systems that already participate in NSQIP can

add the EGS module to their already established data collection system free of charge. The goal of the EGS registry is to collect EGS cases to ensure the capture of patients across all disease severities and treatment modalities. Ideally, all cases should be collected; however, there is an option for case sampling for those programs with limited resources allocated to data collection.

Standardized Pathways:

Emergency general surgery encompasses a broad spectrum of both operative and nonoperative disease processes. Standardization of care is imperative to improving the high morbidity and mortality rates associated with EGS. The first step to achieving standardized care pathways was the development of the AAST grading systems for 16 EGS disease processes. The Journal of Trauma and Acute Care Surgery has recently launched an article series titled "The Journal of Trauma and Acute Care Surgery Emergency General Surgery Algorithms" to fill this important gap in the scientific literature.[4]

Quality Improvement:

In addition, the EGS Verification Program requires a well-defined quality improvement process. Explicit criteria should be used to identify cases for primary, secondary, and tertiary review processes. This process should occur regularly and with the participation of all stakeholders, including, but not limited to, radiology, Interventional radiology, endoscopic services, perioperative services, critical care, and emergency department.

Verification Process:

In preparation for becoming an Emergency General Surgery Verified Program, visit the American College of Surgery website and download the Optimal Resources for Emergency General Surgery document at www.facs.org/egs. The website outlines the components required for verification and provides recommendations.

The EGS verification process mirrors the trauma verification process. Programs must design, implement, and study standardized care pathways and protocols specific to their institution. These include pathways regarding communication, diagnosis, and management, to ensure timely and optimal delivery of care for all patients. Clinical pathways, protocols, and algorithms should encompass all phases of care, from patient arrival to the emergency department to post-discharge follow-up, as well as readmission and the transfer process.

Future Goals:

The EGS Verification Program is an important milestone in improving EGS care. It offers the first opportunity to deliver consistent care to improve patient outcomes.[4] The next step is to encourage the participation of centers across the country. The ultimate goal of the EGS Verification Program is to prepare hospitals to provide timely, high-quality care to emergency general surgery patients nationwide.

Helpful Resources:

https://www.facs.org/quality-programs/accreditation-and-verification/emergency-general-surgery/

References:

1. Hashmi, Z. , Jarman, M. , Havens, J. , Scott, J. , Goralnick, E. , Cooper, Z. , Salim, A. & Haider, A. (2021). Quantifying lives lost due to variability in emergency general surgery outcomes: Why we need a national emergency general surgery quality improvement program. *Journal of Trauma and Acute Care Surgery, 90* (4), 685-693. doi: 10.1097/TA.0000000000003074.
2. Coleman, J. , Davis, K. , Savage, S. , Staudenmayer, K. & Coimbra, R. (2024). Emergency general surgery verification: Quality improvement and the case for optimal resources and process standards. *Journal of Trauma and Acute Care Surgery, 96* (1), e1-e4. doi: 10.1097/TA.0000000000004135.
3. Ross, S. , Reinke, C. , Ingraham, A. , Holena, D. , Havens, J. , Hemmila, M. , Sakran, J. , Staudenmayer, K. , Napolitano, L. & Coimbra, R. (2022). Emergency General Surgery Quality Improvement: A Review of Recommended Structure and Key Issues. *Journal of the American College of Surgeons, 234* (2), 214-225. doi: 10.1097/XCS.0000000000000044.
4. Coimbra R, Salim A, Diaz J Jr, Biffl WL, Winchell R, Napolitano L, Costantini T, Livingston DH, Inaba K. The Journal of Trauma and Acute Care Surgery: Emergency General Surgery Algorithms Article Series. J Trauma Acute Care Surg. 2024 Oct 1;97(4):489. doi: 10.1097/TA.0000000000004475. Epub 2024 Sep 5. PMID: 39233333.
5. Coimbra, Raul MD, PhD, FACS. Another milestone reached: Emergency general surgery verification program. Journal of Trauma and Acute Care Surgery 93(4):p 425-426, October 2022. | DOI: 10.1097/TA.0000000000003756

CHAPTER 15:
How to Become a Trauma Medical Director

Michael A. Vella, MD, MBA, FACS and Mark Gestring, MD, FACS

What is a Trauma Medical Director?

Every verified trauma center in the US is required to have a trauma medical director (TMD), a physician whose incredibly important role is to ensure consistent, high quality trauma care for all patients and maintain trauma program verification. In general, trauma center designation is granted by regional governments (individual states), whereas trauma center verification is a more standardized process performed through the American College of Surgeons Committee on Trauma Verification Review Committee and/or individual states depending on locale. The American College of Surgeons (ACS) *Resources for Optimal Care of the Injured Patient*, most recently released in March 2022 and taking effect September 2023, outlines the minimum specific requirements, roles, and responsibilities of a TMD.

Per these standards, the TMD must (Standard 2.8):

1. Hold current board certification or board eligibility in general surgery (or pediatric surgery for pediatric centers) by the American Board of Medical Specialties, American Osteopathic Association, or Royal College of Physicians and Surgeons of Canada
2. Serve as the director of a single trauma program
3. Be credentialed to provide trauma care and participate on the trauma call panel
4. Hold current Advanced Trauma Life Support certification
5. Provide evidence of ongoing trauma-specific CME
6. Hold active membership in at least one national (level I) or regional/state (level II-III) trauma organization and attend at least one meeting during the verification cycle

Additionally, the TMD has the responsibility and authority to (Standard 2.9):

1. Develop and enforce policies and procedures relevant to the care of the injured patient
2. Ensure providers meet all requirements and adhere to institutional standards of practice
3. Work across departments and/or other administrative units to address deficiencies in care
4. Determine (with their liaisons) provider participation in trauma care
5. Oversee the structure and process of the trauma performance improvement and patient safety (PIPS) program.

Other responsibilities of the TMD may include trauma program leadership (in conjunction with the nurse trauma program manager), community outreach, education, advocacy, resident onboarding, and preparing for program verification. It is important to note that, beyond the minimum ACS standards, individual TMD responsibilities and the pathways in which programmatic goals are achieved very widely among institutions.

Setting up for Success

Success as a TMD requires both a strong understanding of the hospital and regional trauma system as well as the trauma program verification process. While junior faculty heading into their first job will generally not assume this role immediately, those interested can set themselves up for success early in their careers. First, those who are interested should make those interests know to division leadership. We strongly encourage junior faculty to participate in their center's verification site visit, which generally occurs every three years. Adult surgeons will find benefit in participating in affiliated pediatric trauma program visits (and vice versa), as these processes are nearly identical. Many institutions have an associate TMD role, which is often focused on performance improvement and provides an opportunity for mentorship from the TMD. Junior faculty are encouraged to participate early with performance improvement initiatives, outreach/education and protocol development. Involvement in these activities provides opportunities to show interest in trauma program leadership, gain insight into the TMD role, work with the trauma program staff and hospital-wide liaisons, and meet community partners. We believe that relationships with community partners are critical to building a successful program, and those interested in the TMD role should take advantage of every opportunity to interact with these individuals and agencies. In addition, cultivating early and strong relationships with sub-specialists, trauma program liaisons, and other hospital staff is essential in creating a culture of support for the trauma program and ultimately achieving buy-in for programmatic changes.

While very rewarding, the TMD role can be quite challenging at times and requires a significant time commitment. For some, the most challenging aspect of the role relates to managing the team, as emotional intelligence and team leadership (non-clinical/technical skills) have historically taken a back seat during medical school and residency training. When challenges arise, it is helpful to seek guidance from mentors and medical directors at other institutions. Societies like the American Association for the Surgery of Trauma (AAST), Eastern Association for the Surgery of Trauma (EAST), and American College of Surgeons offer leadership courses and opportunities for one-on-one mentorship.

There are often financial considerations when assuming the TMD role, which vary by institution. This may come in the form of salary increases, bonuses, and/or changes in full time equivalents (FTE). Faculty on the pathway to becoming a TMD are encouraged to reach out to mentors and medical directors at other institutions for advice related to negotiation.

Helpful Resources:

Although there are relatively few formal TMD-related courses available, we do recommend the following helpful resources. The authors have no financial interest in any of these entities:

1. Trauma Quality Improvement Program (TQIP): https://www.facs.org/quality-programs/trauma/quality/trauma-quality-improvement-program/?gclid=CjwKCAjwp8OpBhAFEiwAG7NaErC1mc56tLXx2GMbPFYt8TFpEGP-fbw8RlDTLFOeWdHTbEjR3KSVshoCccMQAvD_BwE

2. Resources for Optimal Care of the Injured Patient (2022 Standards, “Gray Book”): https://www.facs.org/quality-programs/trauma/quality/verification-review-and-consultation-program/standards/
3. Trauma Outcomes and Performance Improvement Course (TOPIC): https://www.traumanurses.org/education/stn-topic
4. Trauma Center Association of American Trauma Medical Director Course: https://www.traumacenters.org/page/TraumaMedicalDirectorCourse
5. Trauma Center Association of American Trauma Center Finance and Business Course: https://www.traumacenters.org/page/FinanceAndBusinessCourse
6. Trauma Center Performance Improvement: Principles and Practice, With Illustrative Case Studies: https://www.amazon.com/s?k=trauma+performance+improvement&crid=2KCJ14JTP1MI6&sprefix=trauma+performance+improvement%2Caps%2C66&ref=nb_sb_noss_2

CHAPTER 16:
How to Become a Surgical ICU Director

Laura N. Haines, MD, FACS and Kendra Black, MD

Becoming a leader in your field is honorable, gratifying and sometimes challenging. This guide aims to provide advice for the initial steps towards achieving the role of ICU director and leadership in your institution. If you are reading this, you likely already have a desire and are dedicated to becoming a leader in Surgical Critical Care; this is the cornerstone to becoming a Surgical ICU Director. Make your desire known, ask for and seek opportunities; don't expect or wait for them to come to you.

The first step to become a leader in any area is gaining expertise. Get involved in your institution, be attuned to your ICU's processes and protocols, and think about what you can offer to improve them. Write or rewrite the protocols and implement collaborative quality and process improvement initiatives in your ICU. Leading these types of endeavors will position you well when looking for a job. The evidence of your dedication will be reflected in your accomplishments and involvement as a resident, fellow and junior faculty.

When interviewing and negotiating for your job make your desires to be a leader in critical care known. Though as a new graduate you may not be given that role immediately, let them know you would like to be mentored for it. If there is someone in the role, negotiate a partnership from the beginning. It is okay to ask about the possibility to be an associate or assistant director.

After you start your new position be an active participant and servant leader. This will help make you known as a person who gets things done. Have an open mind, listen, and discover; especially when starting in a new place. Develop a clear understanding of the current state of the system, why things are being done the way they are currently, what works, and what needs improvement. Remember, there is more than one way to accomplish an outcome and processes need to fit the system and resources you are working within.

Making your CV match your goals: It isn't enough to just want to do something. Someone looking to hire you wants to see that you have already invested energy into learning about what it means to be a medical Director in an ICU. So, the next natural question is what activities constitute gained experience and expertise?

Join a committee: Look for a critical care committee to join within your hospital system. Hospital wide committees will provide exposure to the system at large and allow those within the administration to get to know you. In addition, this will give you insights into current initiatives, how they are being employed, and what opportunities exist. Next, get involved with your unit-based committee to provide even more opportunity for implementation of quality

and process improvement projects. Involvement with the current ICU medical director and nursing leadership will provide insights into how they are approaching management and improvement in the unit.

Workgroups*:* Join workgroups or problem specific committees. For instance, your hospital may have groups working on initiatives for sepsis, nutrition, or sedation. Additionally, collaborate with staff members from nursing, physical therapy, occupational therapy, nutrition, or pharmacy. Being part of a workgroup will provide practical experience in development and application of improvement projects. *Lead a project*, if there is an area of interest take the initiative and propose an improvement project.

Get Involved outside of your hospital: There are many national societies that focus on critical care. Many of these societies have conferences and may have special sessions on leadership within the profession. Attending society meetings will help you make connections, expand your knowledge, and provide ideas for making your own ICU better.

Leadership: Being a medical director of any type requires leadership skills. It is highly recommended that you seek out opportunities to gain skills in leadership. Many of our national medical societies offer courses for career development. Attending one of these courses is meaningful when seeking a leadership role and shows you are invested in being a leader. Educate yourself, there are hundreds of leadership books that can help you develop skills and provide new perspectives.

Mentorship: Throughout your training and career, you will have the opportunity to meet a vast array of people who can provide you mentorship. Start to build your board of mentors early. Don't be afraid to reach out to people who are already leaders and are doing what you desire. These people are full of knowledge, and the majority will be more than happy to share their experiences and provide you guidance. Get to know the other intensivists and leaders within your own institution, including those within and outside your own specialty. Importantly, others may be trying to tackle similar problems that you can ultimately work on together.

Look outside of your institution for mentorship, there are colleagues within local or national societies who can be of great assistance to you. Your board of mentors should be diverse, you will likely have different people that you go to for clinical, research, interpersonal, and life experience advice. It is important to remember that mentors can help you facilitate your goals and provide guidance; but you, the mentee, will do the work.

Conclusion: Being an ICU director is an incredibly rewarding role, it is suited for those with an interest in seeking and implementing change in their SICU, in order to provide the best outcomes for patients. It may take years to achieve, so continue to enact positive change and the role will come with time and experience. We hope that this helped serve as a guide and a solid foundation for launching your career as an ICU director.

Helpful Resources & Suggested Reading:

- SCCM Leadership, Empowerment, and Development Program: https://sccm.org/lead
- ICU Directorship for Smarties: https://www.aast.org/education/non-cme-grand-rounds-detail/icu-directorship-smarties
- ACS Surgeon's as Leaders: https://www.facs.org/for-medical-professionals/education/programs/acs-surgeons-as-leaders/
- Start with Why, by Simon Sinek
- Think Again, by Adam Grant

CHAPTER 17:
How to Become an Acute Care Surgery Director

Sebastian Schubl, MD

Background: Most academic medical centers (AMC) have leadership roles for physicians both within the School of Medicine, such as division chiefs, vice -chairs and chairs departments, as well as within hospital leadership which are usually termed medical directorships. There are also more elevated roles within the Schools of Medicine such as assistant and associate deans and within the hospital such as executive medical directors or vice presidents. The reason for this split is that hospitals are organized usually along service lines and have an administrative structure in which physicians often play a leadership role, but faculty are generally employed by the universities themselves and not the medical enterprise. The funds flow of this interaction is unique to each medical center and too complex for this writing, but there is usually a financial split where hospitals will pay the departments of physicians a set sum of money for medical directorship, most or all of which is then passed on to the physician as either salary or a reduction in their clinical obligations, in exchange for that physician to spend that portion of their time dedicated to that directorial role. An example that exists at most AMCs would be a trauma medical director that is responsible for the physician oversight of the trauma program, runs trauma PI and other elements of the trauma center for which that individual is given a percentage buydown of their clinical time by a sum of money that is paid by the hospital to the Department of Surgery.

The most common methodology for this is for a department to set a full-time clinical equivalent (cFTE) to a designated number of work relative value units (wRVUs) and then establish a base salary for that full time clinician. So let us say that a trauma surgeon is set at $300,000 per annum as a base with an wRVU expectation per year of 3000. This means that one wRVU is worth $100. If that surgeon's Department receives $60,000 for a medical directorship this would translate to 600 wRVUs so that surgeon would then have an expectation to produce not 3000 but 2400 wRVUs while they are engaged as that medical director. These compensation plans become far more complex than this simple example, but this is meant to highlight the usual methodology employed. Such "buydowns" are generally sought after as they reduce clinical workloads, allow for leadership growth and organizational influence, create a more varied workday for physicians and are *bona fides* for future opportunities.

Acute Care Surgery (ACS) groups at most AMCs will have at least one division chief, serving as the academic leader of the division, as well as medical directors for trauma, burn and the surgical/trauma ICU. There may also be associate medical directors for these common roles at large volume centers. Some centers will split Acute Care into separate divisions academically, meaning EGS, ICU, trauma, wounds or burn may be their own divisions, or they may all remain

under one umbrella. Similarly, there may be a wound or EGS medical director, again depending on the size of the center and the volume of those services.

Achieving a medical directorship within ACS directly out of fellowship training is uncommon but at smaller AMCs or those with significant turnover is certainly achievable. In each of the clinical groupings under ACS the elements of being a medical director are usually similar and include:

1. Some kind of patient registry
2. Performance Improvement (PI) planning and execution
3. Key performance metrics/indicators, usually tied to the above
4. Often a patient education program or prevention program
5. Clinical pathways and guidelines for common diagnoses
6. Research

In order to attain a medical directorship, the pathway generally entails taking on responsibility and oversight for one or more of the above and assisting the current medical director in that arena. This can be as an associate medical director if that is available or simply doing the work and establishing that you have the skill set to then justify such an associate position. Over time, more of the above can then be taken on, eventually leading to candidacy for the actual medical directorship in question. As always, highly responsive communication skills, reliable meeting attendance, self-study to understand best practices for the work in question and networking at national meetings with like-minded and tasked individuals are keys to success.

5-Year Goals:

- Work with a medical director to take on one of the areas tasked to that role
- Attend annual national meetings and seek out opportunities relevant to that work
- Build a 5-year plan for success around the metrics chosen for that area
- Achieve measurable outcomes and advocate for an associate medical director position
- Find internal forums to present the outcomes of the above work to share with colleagues and leadership

Resources:

1. Data Registry | ACS (facs.org)
2. About ACS NSQIP | ACS (facs.org)
3. Emergency General Surgery | ACS (facs.org)
4. ACS Surgeons as Leaders | ACS (facs.org)

CHAPTER 18:
How to Get Involved in Prehospital Trauma Systems

Joshua Brown, MD, FACS and Kristen T. Carter, MD

"Trauma is a surgical disease from beginning to end" – Norman E McSwain Jr[1]

Introduction:

The seamless integration of trauma surgeons into the pre-hospital phase of emergency care is essential for advancing trauma care. The concept of the "golden hour," as described by R Adams Cowley, MD, FACS, underscores the critical nature of timely and skilled intervention following an injury.[2] This crucial period, often managed by prehospital clinicians with a wide variety of capabilities and experience, is when at least half of the emergency care is administered, marking the beginning of trauma care—*not* when the patient arrives at the hospital.

As the American College of Surgeons' Committee on Trauma advocates, trauma surgeons' expertise is not just required in the operating room but from the very moment the first responder arrives on the scene. "EMTs are the eyes, ears, and hands of the surgeons."[1] These professionals are adept at managing patients in the field, making swift and accurate diagnoses, and performing extrications. Their actions are pivotal in maintaining patients' physiology during transport. More recently, some of the most significant improvements in outcome for trauma patients has come from prehospital interventions.[3, 4]

Prehospital care will not see improvement if trauma surgeons remain distanced from the frontline experience, confined to the critical commentary from within the operating room. By stepping into the pre-hospital environment, trauma surgeons can ensure that the care patients receive is not only immediate but also founded on the most advanced surgical principles and practices.

Getting Started:

Many trauma surgeons that get involved with the prehospital system have experience with volunteering or working in the Emergency Medical Services (EMS) system but this is not necessary. It begins with identifying key stakeholders in the emergency response system, understanding the command structure, and determining how a trauma surgeon's expertise can best be integrated. Collaboration is the cornerstone of such an approach, requiring surgeons to work within the established systems rather than parallel to them.

It is important to recognize that partnering with our emergency medicine colleagues is a key first step. Each EMS agency will have a medical director, which by and large will nearly

universally be an emergency medicine physician. Emergency medicine also has a separate board certification in EMS and at most trauma centers will have an individual or group of emergency physicians that have a particular interest and involvement in EMS. Larger trauma centers and healthcare systems may have a department or office of EMS/prehospital care to engage regional EMS professionals.

It is also important to become familiar with state and local EMS protocols. Capabilities permitted to EMS can vary significantly from state to state, and understanding what your EMS clinicians can do in the field is critical. Trauma surgeons should also become familiar with the regional breakdown of basic versus advanced life support capabilities and what capabilities/staffing EMS agencies bringing your patients typically have.

Engaging in partnerships with the EMS physicians and EMS medical directors can create in-roads for trauma surgeons to contribute significantly to the training and education of first responders. If formal collaborations are not yet in place, trauma surgeons should proactively reach out to these individuals to establish a dialogue to get trauma surgeons involved in EMS activities. Surgeons may also seek out institutions known for their strong track record in prehospital trauma care that can help establish partnerships to share knowledge, protocols, and navigate potential barriers that will contribute to the continuous improvement of prehospital trauma services.

Roles and Opportunities for Trauma Surgeons:

There is a wide variety of roles and activities that trauma surgeons can undertake to contribute to the prehospital system in the area. Education is a common one with ongoing needs in every system. This may involve teaching specialized courses tailored to pre-hospital care. Prehospital Trauma Life Support (PHTLS) is an ATLS analogue for prehospital clinicians that mirrors similar principles. Some regions utilize International Trauma Life Support (ITLS) which similarly has defined modular lectures and skill stations trauma surgeons can teach. Offering to give some case-based trauma lectures to highlight principles of prehospital trauma care are also often well received by EMS agencies. Participating in local or regional EMS educational conferences is another great avenue to provide education to first responders and make connections in the local EMS community. An active educational role helps to ensure that the care provided in the field is as advanced and effective as possible.

Another option we have found highly successful in our program in collaboration with our anatomical gifts program and anatomy instructors is dedicated time for EMS clinicians to have time interacting with cadavers in a guided session with our trauma surgeons, highlighting the pertinent anatomy and injury patterns they may see in the field. Offering shadowing opportunities for EMS clinicians in the trauma bays and operating room has also been instructive. This can be a two-way street for surgeons, working with medical directors to set up observational experiences to spend time with EMS clinicians on a shift in the field, particularly for those that may not have prior EMS experience. Our experience in a variety of systems is that EMS clinicians are highly motivated and grateful to interact with trauma surgeons to improve their competencies.

Other options to become involved in the prehospital systems is through disaster planning and drills, as well as the active shooter training/drills that many EMS agencies conduct now. A more specialized area that may appeal to some trauma surgeons is tactical EMS, helping to train EMS clinicians attached to SWAT teams or other law enforcement agencies. Some tactical EMS utilize trauma surgeons as part of the medical command structure and in some cases even deploy to incidents depending on the background and training of individuals.

Trauma surgeons also have opportunities to become involved in EMS at the policy/protocol level. Most states have bodies that revise and approve EMS protocols, often with representation from trauma surgery, and this may be a good mid-career goal. Discussions with local EMS agency medical directors can help inform local protocols. Surgeons can also help develop their own center's protocols around formalizing EMS handoffs in the trauma bay, trauma team activation criteria, and local EMS follow for specific patient feedback and/or outcome notification.

The motivated trauma surgeon can also seek out opportunities to become assistant or associate medical directors for local EMS agencies. This is most common for a regional air medical transport agency, particularly if one has specific ties to the trauma center or health system. This would allow a trauma surgeon to directly contribute to the medical and operational protocols, training, and quality assurance of EMS clinicians. It can also be a powerful opportunity to introduce cutting edge prehospital care such as whole blood or tranexamic acid for field resuscitation.[5, 6] It is only in exceptional circumstances that a trauma surgeon or another physician provides direct patient care in the field. Some trauma systems have protocols for these circumstances, for example with field amputations, where a trauma surgeon would be ideally positioned to develop and be an integral part of such a protocol.[7]

Another avenue to improve prehospital trauma care is through research and academic pursuits. If not at an institution with strong prehospital trauma research, partnering with other investigators or institutions can be a path forward. One example is participating in the LITES network, Linking Investigations in Trauma and Emergency Services. This is a Department of Defense funded consortium that unites medical professional, pre-hospital providers, and emergency services to conduct comprehensive research on trauma care. LITES aims to enhance clinical practice guidelines and refine standards for managing traumatic injuries through focused research on topics such as blood transfusions, traumatic brain injuries, airway management, and hemorrhagic shock.

Another avenue is to get involved with the American College of Surgeons Committee on Trauma (ACS COT), whose mission is to develop and implement programs that support injury prevention and ensure optimal patient outcomes across the continuum of care. There are opportunities for EMS committee involvement and mentoring with likeminded individuals. Interfacing with other professional organizations such as the National Association of EMS Physicians (NAEMSP) or the National Association of Emergency Medical Technicians (NAEMT)

through their annual meetings can be potential opportunities for involvement in prehospital trauma care systems.

Summary of Potential Roles/Opportunities:

- Education for EMS clinicians
- Disaster Planning/Management
- Tactical EMS
- EMS Policy/Protocols
- Local EMS Outreach and Patient Follow-up
- Assistant/Associate Medical Director
- Prehospital Trauma Research
- EMS Association Meetings/Membership

Resources:

https://www.itrauma.org/
www.litesnetwork.org
https://www.facs.org/quality-programs/trauma/committee-on-trauma
https://naemt.org/

References:

1. McSwain NE, Jr. Prehospital care from Napoleon to Mars: the surgeon's role. *J Am Coll Surg*. 2005;200:487-504.
2. Cowley RA. A total emergency medical system for the State of Maryland. *Md State Med J*. 1975;24:37-45.
3. Spaite DW, Bobrow BJ, Keim SM, Barnhart B, Chikani V, Gaither JB, et al. Association of Statewide Implementation of the Prehospital Traumatic Brain Injury Treatment Guidelines With Patient Survival Following Traumatic Brain Injury: The Excellence in Prehospital Injury Care (EPIC) Study. *JAMA Surg*. 2019;154:e191152.
4. Sperry JL, Guyette FX, Brown JB, Yazer MH, Triulzi DJ, Early-Young BJ, et al. Prehospital Plasma during Air Medical Transport in Trauma Patients at Risk for Hemorrhagic Shock. *N Engl J Med*. 2018;379:315-326.
5. Guyette FX, Brown JB, Zenati MS, Early-Young BJ, Adams PW, Eastridge BJ, et al. Tranexamic Acid During Prehospital Transport in Patients at Risk for Hemorrhage After Injury: A Double-blind, Placebo-Controlled, Randomized Clinical Trial. *JAMA Surg*. 2020.
6. Guyette FX, Zenati M, Triulzi DJ, Yazer MH, Skroczky H, Early BJ, et al. Prehospital low titer group O whole blood is feasible and safe: Results of a prospective randomized pilot trial. *J Trauma Acute Care Surg*. 2022;92:839-847.
7. Howie W, Scott-Herring M, Pollak AN, Galvagno SM, Jr. Advanced Prehospital Trauma Resuscitation With a Physician and Certified Registered Nurse Anesthetist: The Shock Trauma "Go-Team". *Air Med J*. 2020;39:51-55.

SECTION IV:
Navigating Your Early Career as an Educator

Section Editor: Ida Molavi, MD, FACS, FRCSC

CHAPTER 19:
How to Become a Program Director

Alexander C. Schwed, MD, FACS and Linda A Dultz, MD, MPH, FACS

So you want to be a program director?

Many surgical trainees are interested in working with students, residents, or fellows. When asked about future career goals, a common response typically involves some variation of "I want to work with learners in the future." This is likely because it can be engaging and extremely rewarding to train the next generation of physicians and surgeons. However, becoming a Program Director (PD) in a surgical residency or fellowship is a different beast. Certainly, PDs and APDs work closely with surgical learners, but their jobs are not limited to teaching and mentorship. Core surgical faculty work with residents and fellows, and much of the teaching and mentorship of those learners fall to them. The job of the PD however, is much more complex. PDs are responsible for mentoring and guidance, curriculum design, discipline, professional remediation of trainees, and often serve as an interlocutor between the department, the hospital, the academic infrastructure and individual trainees of the program. PDs have a large influence on the culture of a training program, and their attitudes and duration of tenure have been linked to trainee success in annual in-service training exams[1] and even the likelihood of trainees leaving training.[2] The job requirements of a PD are beyond mere surgical educator; indeed, there are significant aspects of administrative work, supervision, leadership, coaching, and many other hats that a PD must wear in his or her tenure as a program leader. It has been described as "a different fire to put out everyday,"[3] by those who love the job, and it is safe to say that only a fraction of those who answer "I want to work with residents and fellows" are, in fact, interested in becoming a program director.

Should you find yourself wanting to lead a residency or fellowship and are not frightened by the idea of daily conflagration, it is important to really understand what the job entails. Like most career paths in medicine, assembling your mentoring team is essential when contemplating becoming a PD. Ideally, a member of your mentoring team should include a current or former PD who can share their lived experience in that role and counsel you appropriately about your own goals. What is it that is attracting you to the job? Are you passionate about implementing curricular change? Do you have a strategic vision of expanding, changing, or improving your current residency or fellowship? Can you dedicate the time needed to a program that needs new leadership? These are all important questions to think about with your mentors to position yourself for success.

As you look towards your first job following your own training, seeking employment at an institution that has a residency or fellowship is somewhat mandatory if, in fact, your goal is

to become a PD. If your interest is mainly working with residents or fellows, there are many jobs where you will have that option but might not necessarily work at a training institution that sponsors its own residency or fellowship. Additionally, you may find yourself in the position of wanting to start a fellowship or expanding your hospital's role in a residency program that is based outside your institution. These are large undertakings and require a lot of institutional and departmental support. It is unlikely that this is a feasible goal early in your training, so if becoming a PD is important to you, choosing your job with that goal in mind will be important.

The Prerequisites

So now that you have given the idea of becoming a PD some thought, the first step is to do the necessary research on the job requirements and fill in the knowledge gaps. In this case, you must become a content expert on Graduate Medical Education (GME) and the Accreditation Council of Graduate Medical Education (ACGME). Specifically, you must know the GME policies and procedures of your institution and program and all of the rules surrounding the ACGME. There are numerous resources available to help you become an expert in the world of GME. Knowing the lingo and policies gives you a seat at the table and allows you to speak intelligently on the topic when asked.

To familiarize yourself, the first resource for most people is the current program/fellowship director at their institution. This person can serve as a mentor and direct you to important resources on policies surrounding medical education. We would also advise you to reach out to multiple PDs for advice as there are many ways to attack the same problem and diversity in thought is strongly encouraged. Next, become familiar with terminology specific to the ACGME and your institutional GME. There are multiple resources to assist in this. The "Learn at ACGME portal" is a fantastic resource composed of online videos, guidelines, and toolkits for anyone interested in education. The course work has a wide range of information for residents, fellows, faculty, coordinators, program directors and designated institutional officials. There are articles, toolkits, short videos, and webinars that discuss a range of ACGME related topics. Additionally, go to your own institution's GME website and familiarize yourself with the organizational chart and the people that hold various positions, such as the DIO and committee chairs. These people can also serve as mentors and provide opportunities for you to get involved at the institutional level. The website should also house the institution's GME policies which are important to know.

Next, try to start as an Associate Program/Fellowship Director before taking on the main role if possible. This is not always an option, but if it is, use it as an apprenticeship to learn the ropes and gain valuable insight into the system. This is helpful to know what challenges and opportunities lie behind closed doors before accepting a leading role in a program. Of note, there can sometimes be a "line of succession" wherein more junior faculty or a current APD have been put in place to take over the program when the current PD steps down. If you find yourself at an institution where there is a clear successor in place, do not be discouraged. You can still make your interest known in a variety of ways. Being involved with program development, taking on a special project or task, or often just approaching the educational

leadership with an offer of help are all generally well-received if they are done selflessly. Your main motivation and interest should be centered around the residents or fellows and their training. Your energy, talent, and insight should all be funneled towards their betterment. This genuine effort and interest will not go unnoticed, and certainly these experiences will help you develop in your role as a clinician educator.

Lastly, build your educational portfolio. Volunteer for lectures, simulations, and coursework whenever possible. Sign up for external courses, additional training, and mentorship programs. This will prove invaluable to validate you as an educator when the opportunity for one of these positions becomes available.

Further Training/Certificates/Resources

There are several ways to build your educational portfolio. The American College of Surgeons (ACS), Association for Surgical Education (ASE) and Association of Program Directors in Surgery (APDS) all have courses and workshops that can be found on their respective websites. We encourage you to review these courses and attend when the timing is most appropriate. For example, The APDS has a "New Program Director Workshop" that is offered every year in the Spring to new program directors and is a great resource. The ACS also hosts a wide ray of courses such as the "Surgeons as Educators" course and offers a Certificate in Applied Surgical Education Leadership (CASEL). The ASE has several courses based on what level you are in your training. They have the Surgical Education Research Fellowship (SERF), Surgical Education and Leadership Fellowship (SELF), and the Curriculum in Education, Innovation and Teaching (ASCENT). Additionally, if interested in directing a surgical critical care or AAST fellowship, make sure to visit the Surgical Critical Care Program Directors Society (SCCPDS) and AAST website for information specific to those fellowships. Understanding the inherent differences in residency and fellowship (ACGME and non-ACGME) programs is one of the cornerstones to keeping your program running smoothly.

Another resource to take advantage of are mentoring programs. Several organizations, such as the Eastern Association for the Surgery of Trauma (EAST), Association of Women Surgeons (AWS), and APDS have great mentoring programs for junior faculty. The APDS has a specific mentoring program for Program Directors and Associate Program Directors that allows networking and collaboration between junior and senior faculty, and also helps introduce you to other surgical educators working in program leadership at different programs. These mentors can be invaluable to get some perspective on your current program or a specific issue you might be dealing with at your home institution.

The Stuff They Don't Tell You

The job of the PD, as has been mentioned, is one that transcends solely teaching or mentoring residents and fellows. There are numerous levels of oversight and regulation for a training program, and with this comes a lot of paperwork, surveys, forms, schedules, charts, and bureaucracy. To help navigate this, having a strong program coordinator is essential. The amount of support given to an individual residency or fellowship will vary depending on the institution's commitment to its programs, the size of the program, and the availability of staff

to serve as a program coordinator. Explicit recommendations are made by the ACGME as to the amount of coordinator support (expressed as FTEs) to programs.[4] In our experience, the quantity and quality of this support is variable. Ideally, as a PD, you will work with a seasoned program coordinator who can anticipate programmatic and regulatory needs while supporting the administration of the program. Depending on your individual circumstances, you may or may not have control over who serves as your program coordinator. A knowledgeable professional in this role can be a lifesaver; someone with less ability, interest, or experience can make the job much more difficult. It is essential to work with your coordinator to establish expectations and norms for the program, and we recommend regular standing meetings with your entire educational team to assure that everyone is on the same page with respect to deadlines, upcoming events, regulatory oversight, and the other mechanics of running a program.

In addition to a strong support system, it is vital that you seriously consider the amount and quality of protected time that you are allotted to serve as a PD. Again, the ACGME makes explicit recommendations for protected time[4] (expressed as a fraction of an FTE) that should be given over to this administrative position. Whether your own institution can support these recommendations may vary, and the situation you find yourself in may not lend itself easily to this requirement. For your own sanity, and to do the job well, it is important to have an explicit understanding from your departmental or hospital leadership about what the job entails, as well as an understanding of the need for protected time. Whether this is a RVU target reduction, a time buydown, or some other arrangement will depend on your local circumstances, but the most important aspect to all of this is the notion that your leadership supports you in this role, and that your time is valued and protected.

The PD wears many hats, and some of the most important ones might best be described as mediator, peace maker, or negotiator. These roles often involve navigating difficult circumstances, whether that be interpersonal conflict, disagreements between divisions or departments, disciplinary issues, or even legal issues. A high degree of emotional intelligence is a sometimes an overlooked requirement for being an effective PD. Collaborating between different divisions in your own department, as well as among other departments and disciplines is essential, as it is almost certain that your trainees will interact with trainees and staff with other departments. When starting out as a new PD, it can often be helpful to meet with the various leaders and stakeholders in your organization, especially if you are new to an institution. Using your early tenure to seek out and listen can work wonders for your ability to collaborate and negotiate in the future and can be a meaningful source of feedback about the training program or perceived issues that the faculty or staff are encountering with your trainees. Showing colleagues your genuine interest and addressing their concerns will help establish a culture of cooperation and collegiality that will undoubtedly serve you and your program well in the future.

Final Thoughts

Being a program director is a wonderful opportunity to meaningfully direct the education and maturation of surgical learners. For those with a passion for leadership,

mentorship, education, and administration, this can be a wonderful creative and professional outlet. Calling on the advice of mentors and colleagues, becoming familiar with the intricacies of GME, and seriously evaluating your interests and passions will serve you well if this is your desired career path.

Additional Resources:

1. https://dl.acgme.org/
2. https://www.facs.org/for-medical-professionals/education/
3. https://www.surgicaleducation.com/

References:

1. Payne DH, Dent DL, Al Fayyadh MJ, et al. Surgery Program Director Turnover Correlates With Residency Graduate Failure on American Board of Surgery Examinations in Civilian Residency Programs. *J Surg Educ*. 2019;76(6):e24-e29. doi:10.1016/j.jsurg.2019.08.003
2. Schwed AC, Lee SL, Salcedo ES, et al. Association of General Surgery Resident Remediation and Program Director Attitudes With Resident Attrition. *JAMA Surg*. 2017;152(12):1134-1140. doi:10.1001/jamasurg.2017.2656
3. New Program Directors Workshop. Presented at: Association of Program Directors in Surgery Meeting; April 10, 2023.
4. Accreditation Council for Graduate Medical Education. Accessed November 28, 2023. https://dl.acgme.org/

CHAPTER 20:
Advice for Balancing Teaching and Consolidating Your Own Skills in the OR

Asanthi Ratnasekera, DO, FACS and
Paula Ferrada, MD, FACS, FCCM, MAMSE

Balancing teaching in the operating room while consolidating your own skills as a new surgical attending can seem challenging, and requires strategic planning and effective communication. The field of trauma and acute care surgery is characterized by its urgency and the need for swift, precise interventions to save lives. As trauma and acute care surgeons, our foremost responsibility is to provide excellent care to patients facing life-threatening conditions such as hemorrhage and sepsis. However, this responsibility extends beyond the immediate treatment of patients; it also includes the essential task of training the next generation of surgeons. Here are some pieces of advice to help you strike this delicate balance effectively.

1. Prioritize Patient Care:

Why: Patient care is the primary responsibility of every healthcare provider, including surgeons. Providing excellent and safe care should always be the top priority.

How: Ensure that your focus during surgery is on the patient and their well-being. Make decisions that prioritize patient safety and the best possible outcomes.

2. Familiarize Yourself with Your Learner and Establish Clear Objectives:

Why: Understanding your learner's background, knowledge, and goals allows you to tailor your teaching to their needs. Clear objectives help both you and your learner stay focused during the procedure.

How: Before the surgery, have a brief discussion with your learner to assess their knowledge and experience. Clearly communicate the learning objectives for the case and discuss their role in the procedure.

3. Teach According to Level:

Why: Teaching according to the learner's skill level ensures that they are appropriately challenged and engaged, while also maintaining patient safety.

How: Delegate tasks that are appropriate for the learner's level of training. For example, allow more experienced residents to perform certain steps under supervision, while less experienced residents may observe and assist.

4. Time Management:

Why: Effective time management allows you to balance teaching with performing the surgery efficiently.

How: Identify key moments during the procedure to explain surgical techniques and decision-making processes. Use brief, focused teaching points that enhance the learner's understanding without significantly extending the length of the surgery.

5. Treat Your Residents with Respect and Dignity:

Why: Building a respectful and supportive relationship with your residents fosters a positive learning environment and motivates them to excel.

How: Acknowledge and appreciate your residents' efforts. Provide constructive feedback in a respectful manner, focusing on areas for improvement while also highlighting their strengths.

6. Provide Constructive Feedback:

Why: Feedback is essential for learning and improvement. Constructive feedback helps learners understand what they are doing well and where they can improve.

How: Provide feedback in a timely manner, focusing on specific actions or behaviors. Be specific about what was done well and provide suggestions for improvement. Encourage your residents to ask questions and seek clarification.

7. Graduated Autonomy:

Why: Gradually increasing the autonomy of your residents allows them to develop their skills while ensuring patient safety.

How: Start by closely supervising your residents and gradually allow them to take on more responsibility as they demonstrate competence. Provide guidance and support as needed, but allow them to make decisions and perform procedures independently when appropriate.

Conclusion:

Balancing teaching residents, students, and fellows in the fields of trauma and acute care surgery while providing excellent patient care is a complex but essential endeavor. Trauma and acute care surgery often involve time-sensitive diseases, where every moment counts in delivering life-saving care. Balancing teaching and patient care in such scenarios require a well-coordinated approach that ensures learners receive the necessary exposure to urgent cases while maintaining patient safety. Remember that finding the right balance is an ongoing process, and it's okay to adjust your approach based on experience and feedback. As you gain more familiarity with your role as an attending, you will become more adept at managing both your surgical responsibilities and your role as an educator.

References:

1. https://www.facs.org/for-medical-professionals/news-publications/journals/rise/articles/intraoperative-teaching/
2. Paquette IM. Transition to Surgical Practice: The Early Years. Clin Colon Rectal Surg. 2019 Nov;32(6):457-460. doi: 10.1055/s-0039-1693420. Epub 2019 Aug 22. PMID: 31686998; PMCID: PMC6824886
3. Pories, Susan, et al., editors. *Navigating Your Surgical Career : The AWS Guide to Success*. Illustrated by Walter J. Pories, Association of Women Surgeons, 2015.

CHAPTER 21:
Tips and Tricks for Teaching Outside the OR

Joe Forrester, MD, MSc, FACS and
Robert G. Sawyer, MD, FACS, FSIS, FCCM, FIDSA

Background: Teaching outside of the OR requires more flexibility and a more diverse approach than teaching inside the OR. Learners have a wider depth of knowledge and educational backgrounds, and the subject material (pretty much all of medicine), is close to endless. In general, the best approach is to teach most about what you know well and care about, while having enough general knowledge to teach the basics of any common malady. Existing teaching frameworks may be useful for structuring ward-based educational sessions (1).

Who:

- For multidisciplinary rounds, particularly in high-complexity environments, it is important to engage the entire team (2), though you don't need to teach everyone on every patient
- Students and residents are obvious
- Always include nurses when able
- Pharmacists become a better resource with give and take learning
- Respiratory therapists learn about non-pulmonary processes leading to lung dysfunction
- Physical and occupational therapists
- Social workers and case managers need to learn our decision-making processes
- Teaching peers takes subtlety
- Patients and families

When:

- Always be sensitive to time constraints. Teaching while people have a long to-do list generally is not fruitful
- During formal rounds (obvious)
- While walking
- During downtime (*e.g.,* waiting for a CT scan)
- During team meals or snack breaks
- During scheduled didactic time
- During morbidity and mortality conferences

What:

- Teach based on clinical material present, *i.e.*, patients you are seeing

- Anything is fair game, but stay away from politics and religion unless it is specifically related to a case
- Trivia is fun in small amounts, such as the origin of some operation or other historical facts
- Relating culture to medicine is okay, *e. g.*, Einstein died from an abdominal aortic aneurysm
- Constantly consider what the learner knows, needs to know, and wants to know
- Teach what you know and love
- Teach about topics where you are the local expert, people expect it
- Teach basic, general considerations even if you are not the expert but the problem is very relevant to a specific patient

Where:

- Almost anywhere
- Try not to disrupt other clinical activities
- Be polite to other healthcare professionals who are not part of the team. For example, take a break from teaching if a non-team member is waiting to ask a question

How:

- Understand your audience including what they know and what they need to know
- Teach at multiple levels if necessary
- Warn learners if you are about to ask them a question and you expect them to not know the answer
- Ask hard questions after saying, "If I ask you a question and you know the answer, you have learned nothing. That's why I ask you questions you need to figure out."
- Do not embarrass anyone
- Leave surgical questions for surgical learners
- Work through problems out loud and collaboratively, thinking out load
- Ask for a differential diagnosis
- Allow learners to ask peers for help
- Pull consultants, if available, into a teaching conversation
- Be comfortable admitting your own knowledge gaps, demonstrating vulnerability can help others feel comfortable voicing their thoughts and being honest about their own knowledge gaps

Helpful Resources

(1) Pascoe JM, Nixon J, and Lang VJ. Maximizing teaching on the wards: review and application of the one-minute preceptor and SNAPPS models. Journal of Hospital Medicine 2015;10(2):125-30
(2) Chapman LB, Kopp KE, Petty MG, et al. Benefits of collaborative patient care rounds in the intensive care unit. Intensive and Critical Care Nursing 2021;63:102974

CHAPTER 22:
How to Help and Utilize Fellows, Residents and Students in Projects

Nicole Goulet, MD, FACS and D'Andrea Joseph, MD, FACS, FCCM

As one navigates the early stages of career, it is important to not only grow clinically, but also academically. This can be challenging for a junior attending. Therefore, it is essential that one utilizes resources available.

Publications and academic society projects offer unparalleled opportunities to network and build lifelong mentor-mentee relationships.[1,2] Engaging the resident or fellow allows the junior faculty to serve as mentors while balancing workload. The benefits are obvious. Academic research, grants and publications are not only crucial for career progression in terms of residency and fellowship applications but often an important prerequisite to academic promotion.[3] Allowing trainees of all levels, from pre-medical students to clinical and post-doctoral research fellows, to participate in research provides them with opportunities to get acquainted with the research and publication process, strengthens crucial career applications, and is often an indispensable opportunity to work more closely with the mentor.[1,2] Further, the relationship is often mutually beneficial to the seniors involved.[4,5]

However, leading a research team, ensuring critical deadlines are met, and navigating the fine balance between teaching and "spoon feeding" which in turn thwarts critical thinking can often be tricky. Herein, we provide guidance on how to best involve trainees in research to maximize productivity and learning.

Before the Project:

Know Your Trainee and Their Proficiency Level

As the principal investigator, it is essential to get acquainted with the academic and personal background, prior research experience, strengths, and potential areas for improvement in each of your trainees' research repertoire. Trainees often have diverse and varying levels of expertise in conducting research and the responsibility to tailor the project/task in accordance with their expertise lies with the team lead. It is often helpful to enquire if a particular dimension of the project interests them, which may prompt a response helping you to gauge their strength or perhaps weakness in a specific realm. While trainees often appear eager to engage, limited time or skill or even a general lack of interest can be disastrous.

Recruit Trainees Passionate About the Project

Projects with disinterested researchers rarely reach fruition. It is, therefore, of paramount importance to enquire why a particular project is well-suited to a trainee's needs or interests. Most often, the project may be relevant to their area of interest either from a clinical standpoint or at times from a purely research and technical perspective. Further, the question that the investigator must always pose to themselves is whether participation in the project will be beneficial to the trainee, either in their career aspirations, future applications and prospects or from an academic learning perspective. While the mentor-mentee relationship is more-often-than-not mutually beneficial, the goal must always be academic advancement and career progression of the mentee.[5] In general, the very participation in research can be helpful to the trainee. However, if the project is neither of interest or interferes with the trainee's usual duties it is advisable to rethink that collaboration.

Setting expectations

It is important to set parameters around a project. This is for the trainee and faculty. Having projects in place without goals often results in failing to complete the project or inability to publish outdated data. Part of the enrollment of the trainee should be establishing clear expectations. This should include short- and long-term goals with feasible deadlines and a discussion on time commitment and project duration. Trainees often work long hours and other limitations such as graduation dates. Thus, an estimated project time frame can help envisage and put into perspective future goals.

Authorship

Authorship can be a point of contention in any research team.[6] The responsibility of maintaining harmony and ensuring each member's efforts are appropriately underscored and justly rewarded lies with the mentor.[6] The potential for authorship and any preconditions must explicitly be detailed before the project is initiated. Misplaced expectations or assumptions about potential authorship that may not always be feasible or ethical will leave a distasteful note, lead to distrust, and may negatively impact the attending's institutional standing and reputation as well as the trainee's desire to participate in future research endeavors. Thus, an open discussion on potential authorship in case of academic productivity must be a prerequisite to the initiation of a project or a trainee's recruitment. Referral to the guidelines on authorship can be helpful and should be presented as part of the onboarding into any project.[7]

<u>Running the Project</u>:

Provide Guidance

As the expert on the subject, it is incumbent on the team leader to lay the foundations and building blocks on which the project centers. This includes basic guidelines on areas that must

be focused on and explored, the chronology and estimated timeline, resources in terms of prior seminal work that trainees may not be well-acquainted with or other crucial data sources.

It may be helpful to delineate a basic skeleton of the intended final product, and delegate tasks best-suited to each member's abilities and prior domain of expertise. Here, the importance of maintaining the balance between guidance and a fair degree of leeway in terms of intellectual freedom cannot be overstressed. The trainees must not only be allowed but strongly encouraged to explore various angles and see the project through their own lens as they see fit, with the aim to foster intellectual growth and critical thinking.

Check-in Frequently

Once the project is underway, expectations vis-a-vis deadlines and expected output must be stipulated at regular interval meetings. These check-ins enable the faculty member to have an overview of the progress of the project and to provide support and guidance where necessary. It is not unusual to encounter hurdles, and identifying these early may help mitigate them. The team lead must be considerate in terms of meeting the stipulated deadlines.[8] The most efficient way to resolve issues that arise is through prompt communication. Cultivating a culture in which trainees are encouraged to reach out and seek help regarding any issues whether project-related or otherwise is essential.[7]

Know Your Audience

The importance of being cognizant of the "targeted audience" cannot be overstated. Targeted audience may refer to the journal editors and reviewers, or subscribers and readers. Projects often need to be tailored to a specific publication and their readership in terms of writing style, formatting, and aspects discussed and underscored in the final product to maximize the possibility of publication as well as impact in terms of clinical practice or policy change. The responsibility lies with the senior author to ensure team members are cognizant of the targeted audience and how that impacts the project.

<u>After the Project</u>:

Feedback

Data suggests that high-functioning teams often have efficient and effective communication as one of their strengths. Further, no matter how successful and productive a team, there is always room for improvement. Trainees often work with several mentors and have a unique vantage point in terms of their assessment of myriad leadership and teaching styles. Thus, feedback regarding the project, the difficulties encountered and avenues to alleviate them, and identification of areas for growth and improvement is imperative.[9] It is noteworthy that trainees may not necessarily voice a negative opinion on their own unless specifically prompted.

Continued Mentorship

Many mentor-mentee relationships often fizzle out after the completion of the project. The responsibility for continued mentorship lies with both parties. After the project, enquire whether the trainee would be interested in getting involved in future endeavors, check on them and their mental wellbeing intermittently, offer to provide help and opportunities for networking and career progression, continue to mentor them, and remind them to pay forward!

Learning how to advance one's career by growing academically is an important aspect for the new attending. Developing projects and engaging trainees to help move them forward can be rewarding and mutually beneficial. Understanding how to do this optimally is a necessary skillset.

The authors would like to acknowledge Dr Amir Sohail for his contributions.

References:

1. Mentoring: the role of a mentor and finding one. Moed BR. *J Orthop Trauma.* 2012;26:0–4.
2. Junior faculty members' mentoring relationships and their professional development in U.S. medical schools. Palepu A, Friedman RH, Barnett RC, Carr PL, Ash AS, Szalacha L, Moskowitz MA. *Acad Med.* 1998;73:318–323.
3. Adler SR, Chang A, Loeser H, et al. The impact of intramural grants on educators' careers and on medical education innovation. *Acad Med*. 2015;90(6):827–831.
4. Steelman K, Fleifel D, Waheed M, Vaidya R, Waheed MA. Mentorship in a Surgical Residency: A Comprehensive Review of the Literature. Cureus. 2023 Aug 13;15(8).
5. Mentoring during residency education: a unique challenge for the surgeon? Pellegrini VD Jr. *Clin Orthop Relat Res.* 2006;449:143–148
6. Albert T, Wager E. How to handle authorship disputes: a guide for new researchers. Science Editor and Publisher. 2023 Apr 15;7(2):238-42.
7. https://www.icmje.org/about-icmje/faqs/icmje-recommendations/©2023 International Committee of Medical Journal Editors. All Rights Reserved.
8. Rowley JB. The good mentor. Educational leadership. 1999 May 1;56(8):20-2.
9. Raju SA, Sanders DS. Reverse mentoring—never stop learning. bmj. 2023 Jan 11;380.

SECTION V:
Navigating Your Early Career as a Scholar

Section Editor: Jared Gallaher, MD, MPH, FACS

CHAPTER 23:
Strategies for Keeping Up with Important Literature

Julia R. Coleman MD, MPH and Leah Tatebe, MD, FACS

Background: Keeping up with the latest published research is vital to practicing evidence-based care. However, as you acclimate to your operative and clinical responsibilities in your new role as an attending, it can be challenging to stay current on the latest literature. With time being your most precious commodity, having an efficient strategy is vital to staying informed. Everyone's learning style is different, so the strategies outlined below can be catered to one's mode of data digestion.

Five-Year Goals:

1. Find essential resources that fit your learning style
2. Develop a multi-tiered strategy for receiving automated alerts of the latest important literature
3. Find conferences that meet your continuing education needs and review the latest science
4. Establish involvement in departmental educational activities around literature review

Strategies:

1. Important data sources
    a. **PubMed**: You can create PubMed alerts and receive emails on pre-specific frequencies (daily, weekly, monthly) based on your selected filters. You can also filter for leaders in topics you're interested in or specialty specific areas of your interest. Google Scholar also provides the same services.
    b. **Doximity:** You can sign up for a customized newsletter, which delivers a weekly summary of your tagged special interests and literature related to your specialty. This will include audio and written resources, from op-ed pieces to podcast episodes.
    c. **QxMD:** This company provides mobile solutions for healthcare professionals to drive evidence-based medicine in clinical practice. You can sign up for Read by QxMD, which provides an email with links for the most important and cutting-edge research based on the keywords you provide.
    d. **Journal-specific alerts:** If there are journals that you read frequently and publish content you're interested in, most will have options to receive highly trafficked articles. For example, JAMA can send you weekly reports of the top-read articles in their journal.

e. **Podcasts:** Behind the Knife is a premier surgical podcast with great journal review episodes on hot topics in surgery. If you're a visual learner, they also have YouTube-based Landmark Papers Journal Cast, in conjunction with the American College of Surgeons Resident and Associate Society (ACS-RAS), which discusses high-yield literature every surgeon should know. Several surgical societies put forth podcasts with episodes covering the latest in the literature in our surgical specialty, including the Eastern Association for the Surgery of Trauma (Traumacast) and American College of Surgeons (Operative Word), as well as groups that cover relevant literature in critical care (Anesthesia and Critical Care Reviews Commentary [ACCRAC] podcast, Trauma ICU Rounds led by Dr. Dennis Kim).
f. **Eastern Association for the Surgery of Trauma Literature Review:** This prominent surgical society not only puts forth a podcast, as mentioned above, but you can also sign up to receive monthly or bimonthly emails with a summary of two to four high-yield, recently published articles in emergency general surgery, trauma surgery, and critical care.
g. **American Association for the Surgery of Trauma #TurnoverTime:** This initiative, organized by the Associate Membership, includes monthly short video summaries of a highly circulated, recently published paper in our specialty.

2. Strategies to organize papers
    a. Once you find papers relevant to you that you want to cite, re-read, or have readily available, it's prudent to start organizing them in your records. One strategy includes creating topically named folders on your computer and saving papers with specific titles to remind you of its findings.
    b. There are software options that help organize and track important literature (by creating folders) but also for inserting citations into documents, with Endnote being the most notable. Zotero is a free alternative if your institution does not have a subscription to Endnote.

3. Conference attendance
    a. Most conferences will have a session highlighting landmark papers from the previous year, which can be a high-yield activity. Moreover, the plenary sessions at conferences are often the best for catching cutting-edge, high quality scientific work. Even if you cannot attend, you can also quickly find the most impactful work from the conference by reading the manuscripts of the award winners (as most conferences will recognize the strongest work).

4. Involvement in departmental activities
    a. While there are great national resources, peer review at your institution is also essential. Most departments will have a journal club; if not, this can be readily organized with the fellows or residents.

Helpful Resources:

- https://www.science.org/content/article/how-keep-scientific-literature
- How to Subscribe to Our Specialty-Focused Newsletters – Help Center (doximity.com)
- QxMD | Moving Research into Practice | QxMD
- Behind The Knife: The Premier Surgery Podcast | Surgical Education
- EAST Monthly Literature Reviews - The Eastern Association for the Surgery of Trauma

CHAPTER 24:
Getting Started in Research

Mackenzie Cook, MD, FACS and Martin Schreiber, MD, FACS, FCCM

Background: Transitioning from trainee to independent researcher is challenging as you adjust your planning timeline to span years and decades. Switching to the long view starts with the job search and continues with the groundwork laid in the first five years of practice. However, the most critical step is defining your Big Why.

The Big Why: In training, faculty influenced and guided your research agenda and timeline. As you transition to independence, these boundaries relax. The first step in your research career is deciding WHY you want to do research, and this may be one of the first opportunities you have had to truly consider what you want out of your career. It is no longer sufficient for the WHY to be promotion or mentor expectations, as there are multiple routes to promotion in the modern academic structure. The Big Why is an encapsulation of the problem that you see and your passion for understanding and solving it. Research cannot be a hobby or something you do on weekends. In order to be successful, it has to be integral to your job. Your BIG WHY comes from reflection, experience and reading. It can be distilled into a statement of purpose and vision. Once you know your BIG WHY, you can find the right job.

Find the Right Job: It is important to note that the days of the true triple (or quadruple) surgeon threat are likely passing (-ed). The reality of current practice and the likely evolution in the coming decades makes it almost impossible for an individual surgeon to excel in all domains. It is important to balance your research BIG WHY against your clinical, personal and other academic priorities, as compromises are always needed. In order to be successful, you must have protected time and research infrastructure. Now it is time to work!

The First Year: The first year of an academic career is an opportunity to stake out your academic interest and establish relationships, collaborators, and mentors to support your career. It is also a time of rapid clinical growth that can distract from research pursuits. Harness the enthusiasm and stay focused on building the foundations that will propel you to success. Remember that this is a research marathon. In the first year:

1. Identify your team: Find collaborators within your division, department, and institution. This will include mentors as well as peers. Schedule meetings early and use your Big Why to build relationships and find common ground. Identify available resources to help with laboratory work, statistical analysis, and grant writing.
2. Understand your environment: While finding collaborators and building your team, work to understand what other researchers and clinicians in your division and department are working on. Give Grand Rounds and sell your BIG WHY to the group.
3. Develop good writing habits: While you may not have much to write about initially, setting aside a consistent time to read and write is essential. The surgeon-scientist who

misses their due dates is a cliché for a reason; it happens to everyone. Be proactive and realistic about what you can accomplish. The hardest thing to do is start!

4. Maintain your CV: Research collaborations, grant opportunities, and speaking opportunities will appear with little warning. Proactively maintaining your CV will allow you to dispatch it promptly when needed and prevent you from forgetting key accomplishments in your next promotion cycle.
5. Seek out multi-institutional trials: National organizations frequently have multi-institutional trials you can join. Find one that aligns with your BIG WHY to advance your research productivity and connect with national colleagues.

The Next Five Years: Now is the time to think proactively about funding, system development, and refining your Big Why. Building your team, understanding resources, continuing writing, and proactively maintaining your CV remains important. In addition, over the next five years:

1. Refine your BIG WHY: Make sure this is still what you are passionate about and that the problem will capture your attention for the next decade.
2. Take on learners: You will increasingly be looked to as a mentor. Fellows, residents, and medical students will seek you out. Find them projects! The more junior the trainee, the more discrete a project you should find for them and the more guidance they will need. Provide clear deadlines and advice. Allow them access to your research team and national collaborators. They will work wonders if properly supported!
3. Maintain structure: As your clinical practice expands and additional administrative responsibilities accumulate, delegating and maintaining timelines is essential. No sustained research program can happen without funding, and applications frequently require months or years of work and planning. Work closely with your mentors, administrators, and collaborators to stay structured regarding deadlines.
4. Make everything count twice: While your Big Why will drive your primary research agenda, educational and administrative responsibilities are an excellent source of smaller research projects. If you undertake a quality, administrative, or educational project, include a research component from the beginning. The outcome will be much better than forcing a research component after the fact.
5. Selectively say no: The number of exciting topics exceeds what anyone can pursue. Consider your available time and energy framed within your Big Why and use this to guide your commitments. Become a sponsor by saying “no and…” followed by a recommendation of a colleague or learner who could pursue the opportunity.
6. Expect rejection, and don’t give up. You will have manuscripts rejected and grants that are not funded. This is part of research that everyone faces. Listen to the critiques, seek advice, and resubmit an improved product.

A Final Word: Research comes in many forms. There is room for basic, translational, and clinical researchers, education scholars, health outcomes researchers, quality improvement specialists, public health specialists, informatics researchers, and many more. Think creatively about your Big Why, build collaborative networks, and make everything count twice!

Helpful Resources:

-Goldstein AM et al. Basic Science Committee of the Society of University S. A Roadmap for Aspiring Surgeon-Scientists in Today's Healthcare Environment. Ann Surg. 2019;269(1):66-72.
- Keswani SG et al. The Future of Basic Science in Academic Surgery: Identifying Barriers to Success for Surgeon-scientists. Ann Surg. 2017;265(6):1053-9.
- Golden N et al. Ten simple rules for productive lab meetings. PLoS Comput Biol. 2021;17(5):e1008953.

CHAPTER 25:
Opportunities for Funding

Jonathan P. Meizoso, MD, MSPH, FACS
and Ben L. Zarzaur, MD, MPH, FACS

Research funding is vital to support the cost of performing experiments and clinical trials, conference travel, personnel salaries, and the expense of protecting time from clinical duties. Obtaining extramural funding is critical for young investigators to create a sustainable research program. There is no "correct" way to become a funded investigator, but there are some characteristics that are common to those who become successfully funded, such as organization, a relentless attitude and focus. As noted in other chapters, organizing your research idea in a concise proposal is crucial to securing funding and will help direct the best funding source for your project. There are many potential funding opportunities, including many targeted to early-career faculty. Here are some potential sources of funding to consider:

- Intramural funding: "Startup" funds from the university or your department may be available at your institution to help collect preliminary data. These funds are often small and short-term. Additionally, many universities have a Clinical and Translational Science Institute, which often funds early-career investigators.
- Society grants: Numerous surgical societies award grant funding annually to early-career investigators (**Table**). While these funds will not support a long-term project, they can help collect preliminary data to apply for a more significant award.
- Industry grants: If your research is focused on using a particular device, assay, or other industry-related product, companies may be open to a partnership. Participation in extensive industry studies (e.g., pharmaceutical trials) may also result in surplus funds paid to your institution for participation in the study that can be used for other studies.
- Federal funding: This is the "holy grail" of research funding. Federal funding includes grants from the National Institutes of Health (NIH), Department of Defense (DoD), and other governmental agencies (e.g., Agency for Healthcare Research and Quality). The NIH offers various Career Development Awards ("K" awards) aimed at early-career investigators, as well as independent investigator ("R") awards. Federal funding mechanisms are generally more difficult to obtain and usually require some track record of research productivity or previous funding.
- National Science Foundation: The NSF typically funds research that is more foundational than other funders. Usually, these awards go towards basic science projects and often prioritize prior NSF awardees.
- Patient-Centered Outcome Research Institute: PCORI is a partnership between the government and a non-profit organization that oversees funding emphasizing patient engagement. Specific funding announcements are available on the PCORI website.

- Foundations and Patient Philanthropy: The Robert Wood Johnson Foundation, the Howard Hughes Medical Institution, and other non-profits fund health-related research. Partnering with your institution's development team can help you secure funding for a research program by finding an appropriate donor to support your work.
- Coalition for National Trauma Research (CNTR): While they do not fund research, they can assist with funding proposals and finding mentors.

Helpful Resources:

- AAST: https://www.aast.org/Research/Funding-Opportunities
- American College of Surgeons: https://www.facs.org/for-medical-professionals/professional-growth-and-wellness/scholarships-fellowships-and-awards/research/
- American Surgical Association: https://americansurgical.org/awards_Fellowship.cgi
- Association for Surgical Education: https://surgicaleducation.com/cesert-grants/
- Coalition for National Trauma Research (CNTR): https://www.nattrauma.org
- Congressionally Directed Medical Research Programs: https://cdmrp.health.mil
- EAST: https://www.east.org/education/annual-scientific-assembly/awardsscholarships
- Grants.gov: https://www.grants.gov
- NIH Reporter: https://reporter.nih.gov
- Orthopaedic Research and Education Foundation: https://www.oref.org/grants-and-awards/grant-programs
- Proposal Central: https://proposalcentral.com
- Society of Critical Care Medicine: http://www.sccm.org/Research/grants/Pages/SCCM-Research-Grants.aspx
- Society of University Surgeons: https://www.susweb.org/history-of-awardees/#
- Trialect: https://trialect.com

Table: Society Grant Funding Opportunities

Society	Award	Amount
American Association for the Surgery of Trauma	AAST Research Scholarship	$50,000
American College of Surgeons	C. James Carrico, MD, FACS Faculty Research Scholarship	$80,000
American Surgical Association	Fellowship Research Award	$75,000
Association for Academic Surgery	Joel J. Roslyn Faculty Research Award	$50,000
Association for Academic Surgery	Henri Ford Junior Faculty Research Award	$50,000
Eastern Association for the Surgery of Trauma	Trauma Research Scholarship	$40,000
Shock Society	Faculty Research Award	$83,000
Society of Critical Care Medicine	SCCM-Weil Research Grant	$50,000
Society of University Surgeons	Junior Faculty Research Award	$30,000
Society of University Surgeons	Junior Faculty Award for Underrepresented Minorities	$30,000

CHAPTER 26:
K to R Pathways and Other NIH Pearls

Patricia Martinez-Quinones, MD, PhD and
Lisa Marie Knowlton, MD, MPH, FACS, FRCSC

Research is a critical component of an academic surgeon's practice. As an Acute Care Surgeon, learning to navigate clinical demands while building a productive and meaningful research career can be challenging. The continued production of high-quality research requires resources and funding through successful grant applications. Grant writing is a fundamental skill that must be cultivated, like the technical aspects of surgery. This involves critical thinking, dedication, perseverance, and mentorship. Here, we outline some essential steps and pearls to successfully secure your first grant and build an ongoing track record of funded research.

1. So, you have an idea – what makes it great?

The most critical first step is identifying and honing your expertise in your chosen area, whether it is basic science or translational research, health services, outcomes, policy, innovation, surgical education, or global surgery. This ideally should start in residency and fellowship as you begin to delineate your clinical career pathway and build your portfolio of publications and presentations. While in training, learn to schedule time to read and generate new study ideas with trusted colleagues and mentors. In addition to the technical approach of a project, major grants are scored on their significance, innovation, and potential for impact in the field. Career development awards, like a K award, also consider the candidate's background, career goals and research objectives, career development activities during the award period, and the mentor's training record and research experience. Some questions to consider while refining your research question: How will this research advance my field? Will my results have a widespread impact? How does my scientific approach lead to innovation? At this stage, it is essential to develop a specific, meaningful, actionable research strategic plan on what you want to do and why you want to do it ("know your why"). As you begin grant submissions, take advantage of grant writing courses or NIH Clinical and Translational Science Award programs (CTSA) at your institution or through professional societies. Ensure you leave enough time to iterate on your grant and circulate it for feedback. Procrastinators beware!

2. Identify funding mechanisms and define your timeline

There are a variety of intramural and extramural funding mechanisms available. Depending on your prior research experience, submitting a major NIH career development award in your first year as an attending may not be realistic. Many hospitals and universities have opportunities for seed grants and other internal funding. Explore grant opportunities within professional societies, such as the AAST Faculty Research Scholarship for early career surgeons. For many societal awards, only faculty with no prior NIH funding are eligible. They typically

provide $20,000-$100,000 in funding, requiring less preliminary data and a more concise application. Applying for small grants offers an early opportunity to organize and refine ideas and practice grant writing skills. Although this chapter focuses on NIH awards, there are many extramural funding mechanisms, including the Agency for Healthcare Research and Quality (AHRQ), the Patient-Centered Outcomes Research Institute (PCORI), the National Science Foundation (NSF), the Department of Defense (DoD), non-profit organizations, and industry-sponsored grants.

3. Applying for a career development K award

The NIH Mentored Research Scientist Career Development Award, or K award, provides support and protected time for those who have demonstrated independent research potential but need additional mentorship to establish or sustain an independent research program. They provide up to five years of salary support and guarantee substantial protected time (minimum of 75%, sometimes 50% for certain procedural specialties) to engage in research. The key to a successful application is preliminary data and a strong mentorship plan with an engaged mentor. Only those within seven years of their terminal degree or final training who are U.S. citizens or permanent residents can apply for K awards. If those criteria are not met, other pathways to an R independent award exist, including two-year R21 exploratory research grants. These funding mechanisms provide investigators with resources to test hypotheses, gather preliminary results, and demonstrate potential as an independent researcher.

4. Applying for an R01 award

The NIH R01 award is the oldest grant mechanism within the NIH and supports a focused project performed by an independent investigator. It requires a complete 12-page scientific application and robust preliminary data. While a prior K award is not necessary to apply for R01 funding, the applicant must demonstrate potential as an independent researcher with their own body of work (not that of your mentor) and, most often, prior extramural funding. There is no defined timeframe to apply for your first R award, but applying midway through a career development award is an excellent target.

NIH Pearls and Helpful Resources:

Once you identify the grant mechanism and institution, take the time to contact the Program Officer (PO). Building rapport with your PO is critical, as they are often willing to review your specific aims page and provide preliminary feedback to ensure that research is aligned with the funding mechanism.

Take advantage of early-stage investigator (ESI) status, defined as a Principal Investigator (PI) who completed their terminal research degree or post-graduate clinical training within ten years and has no previous NIH independent research award. If you previously held a K award or R21, you are still eligible for ESI within this time frame.
https://grants.nih.gov/policy/early-stage/index.htm

NIH Reporter: The NIH maintains a website for actively funded projects. Provides examples of successfully funded projects with an overview of the work in specific areas.
https://reporter.nih.gov/

NIH Grant Application Guide – key resources for preparing your scientific application and supporting documents (NIH biosketch, budget, human subjects, etc.)
https://grants.nih.gov/grants/how-to-apply-application-guide.html#format
NIH Research Career Development K Awards
https://researchtraining.nih.gov/programs/career-development/K01
NIH Research Project Grant Program R01 Awards
https://grants.nih.gov/grants/funding/r01.htm

SECTION VI:
Navigating Your Early Career as a Leader

Section Editor: Saskya Byerly, MD, FACS

CHAPTER 27:
Opportunities for Leadership Development

Tanya Anand, MD, MPH, MT(ASCP), FACS and Bellal Joseph, MD, FACS

Congratulations! You are probably in fellowship or perhaps an early trauma and acute care surgeon and are motivated to be a leader in trauma. You may be reading this section because you want to better understand the next step and how to take advantage of available leadership opportunities. Becoming a leader in our field can look different for each individual. For example, one may be very interested in education, while others may find that becoming a medical director, or advancing the practice through clinical/translational/basic science research is more stimulating. It is imperative to remember that leadership growth occurs with each opportunity and the selection of one path does not prohibit you to change later if your interests and journey changes. Nevertheless, the most important conversation is with yourself. A self-evaluation of your interests and areas of fulfillment is important and you may begin to focus your efforts. However, others may not really know what each path entails. Thus, reaching out to senior faculty members or mentors who have walked a similar path is important.

Leadership opportunities can be considered in the context of the exposure and impact (local, regional, national) as well as the area of interest. Discuss your interests with your divisional and departmental leadership. This will allow for a candid discussion of opportunities and identify mentors.

A. Local Opportunities:

- Hospital Steering Committees
  - **i.** Quality
  - **ii.** Protocol Development
  - **iii.** Peer Review
- University Steering Committees
  - **i.** Deans' consuls
  - ii. Faculty leadership
- Medical Directorships (Director/Associate/Assistant)
  - **i.** Trauma Medical Director
  - **ii.** ICU Medical Director
  - **iii.** Acute Care Surgery
  - **iv.** Burn Director
  - **v.** EGS Director
- Educational Directorships (Director/Associate/Assistant)

i. Medical Student Clerkship
ii. Residency
iii. Fellowship

B. Regional / State Opportunities:

- Critical to reach out to your regional leaders to understand what exists.
- Regional and State ACS or Committee on Trauma (COT)

C. National Opportunities:

- Becoming an American College of Surgeons Fellow:
    i. Eligibility Requirements:
        1. 3 references: 2 (active fellows), 1 chief of surgical services
        2. Board Certified
        3. Unrestricted medical license.
        4. At least 12 months of clinical practice.
        5. No reportable action pending.
    ii. Upload Current CV.
    iii. Have a full year's worth of case logs recorded.
    iv. Fill out fellowship application.
    v. Checklist Link: https://web4.facs.org/eBusiness/ACS/domesticchecklist.aspx?_ga=2.43683557.1987866373.1700788278-1054041809.1700788278
- Professional Organizations: National organizations provide a rich opportunity to network and collaborate with mentors and colleagues. They provide an avenue to submit research, volunteer to advance practice guidelines, and participate in mentoring aspiring trauma surgeons.
    i. Get involved:
        1. Become a member of a committee and be an active participant. Professional societies either have a volunteer link on their website or send a call for volunteers. Once part of a committee volunteer for tasks and complete them in a timely fashion. Help other committee members with their projects.
        2. Respond to the calls for abstracts, essays, or travel awards.
        3. Volunteer to be a discussant or moderator. These calls are normally emailed.
    ii. Trauma Surgical Societies – AAST, EAST, and WTA are the three major trauma societies to attend. Considerations such as mentorship opportunities, collaborative/research, and committee and leadership opportunities are important to consider. Below are some specifics of membership to consider:
        1. American Association for the Surgery of Trauma (AAST)
            a. Meeting: September of every calendar year. Abstract submission is usually in February.
            b. Membership: Associate Membership or Full Membership status available. Associate membership is open to surgical residents,

fellows, and attending surgeons within 7 years of completing training. To qualify for AAST Fellow membership one must be an American College of Surgeons (ACS) fellow and must have attended a past AAST meeting. Applicants must have also successfully completed an ATLS Course.

c. Pros/Cons: More formal attire with (suits and ties is male) professional dress. Great collaborative opportunities and workshops as well as a chance to meet the leaders in trauma.

2. Eastern Association for the Surgery of Trauma (EAST)
    a. Meeting: January of every calendar year. Abstract submission is usually July 1.
    b. Membership: Full membership: Requires applicant 2-3 sponsors for application. List of potential sponsors is available online. An active medical license, board certification, and being active in the field of trauma. Provisional membership: Physicians who are not yet board certified may join EAST as Provisional members. Physicians from other countries are also welcome to join as international members. Other health care professionals may join as Associate members. Medical Students may also obtain membership.
    c. Pros/Cons: More informal and casual atmosphere. Easier to mix and mingle with younger trauma surgeons and meet with mentors. EAST makes it easy to obtain membership and find sponsors for application.
3. Western Trauma Association (WTA)
    a. Meeting: February or March of every calendar year. Abstract submission is usually in September.
    b. Membership: Applicant must have *attended a meeting* (in person) within three years of applying. Submit a completed application with a sponsor letter from a member of the Association. Candidate must also have submitted, within three years of the time of application, a scientific abstract as an author/co-author for consideration by the Program Committee. Becoming a member is then dependent on approval of the Board of Directors and an available position in the applicant's specialty.
    c. Pros/Cons: Membership is limited and more difficult to obtain than other societies. Abstracts can only be submitted if sponsored by WTA member. Lots of skiing and winter fun!

iii. Other Surgical Societies to consider.
1. American College of Surgeons

2. Association of Academic Surgery/Society of University Surgeons

CHAPTER 28: Local/Institutional Organizations and Committees

Isaac W. Howley, MD, MPH, FACS and
Thomas M. Scalea, MD, FACS, MCCM

Every medical school, academic department, and hospital has multiple committees through which policies are set and decisions are made. Membership on institutional committees is an excellent way to demonstrate your commitment and willingness to be of service to your institution. Active participation in committee work will build your reputation as a team player and may open opportunities for leadership and recognition in your institution. Demonstrating that you can work with others to advance the goals of your institution probably demonstrates leadership better than any other accomplishment! Committee work is an excellent way to network and build connections throughout your institution, which may open doors for future collaboration on clinical, research, or other projects. Additionally, working on committees may allow you to advance policies and procedures and advocate for resources that may benefit your partners, trainees, and patients.

Different Roles for Different Committees:

Medical schools typically have numerous committees which provide guidance and oversight of faculty affairs, student and trainee curricula and affairs, and research. Committee work for the medical school is typically strongly desired, and may be mandatory, when faculty apply for promotion to associate or full professor. Since you will be seen as a representative of your department, membership on these committees often requires nomination by a department chair or division chief.

Your academic department may also have its own committees responsible for affairs within the department, such as resident progression and achievement of core competencies, diversity/equity/inclusion, and faculty promotion. Membership on these committees may be by invitation of the chair or residency program director, or they may be open to self-nomination.

Hospital committees typically deal with the administrative and policy side of clinical care. Examples of hospital committees from our own institutions include Peer Review, Pharmacy and Therapeutics, Sepsis, Tissues and Transfusion, and Ethics. Work on these committees is more likely to directly affect your clinical work than is work for your university/medical school/academic department. However, this form of service has traditionally been less important to medical schools than is work for the medical school itself, and accordingly has counted less for faculty promotion. These attitudes are changing at many

institutions; your chair, chief, and senior partners should have insight as to how hospital committee service is viewed in the promotion process. Membership in hospital committees may be available for self-nomination, or you may need to be recommended to the committee by an administrator or senior colleague.

Thinking Strategically:

As with any other endeavor in your career, membership and work with committees will require a commitment of your time and attention, which can vary wildly between committees and over time. Some committees may meet infrequently and rarely require you to work on projects. Membership on such a committee may allow you to show service to your institution on your CV, although such service will do little to help you make connections or build your leadership skills. Other committees may be more time intensive, requiring you to review clinical charts or applications to training programs, or design administrative processes. As with any other task in life, you are more likely to be productive and successful if you find the work interesting and enjoyable. For example, Dr. Howley's first major research project as an attending investigated massive transfusion processes and outcomes; this fit perfectly with the work of the Tissue and Transfusion committee at his hospital, allowing him to build a strong collegial relationship with his blood bank director and shape hospital procedures based on the results of his research. Similarly, many successful research projects and publications have originated from issues discussed in institutional committees. However, even committee assignments which initially seem to be a poor fit for your interests may be incredible opportunities. Many years ago, one of our colleagues was assigned to a local leadership position for which they had no initial interest; over time, their interest in the work increased, and they eventually gained international recognition for work that grew directly out of this experience.

It is worthwhile to think about institutional service from the perspective of your chair and chief. They are likely to view your work on committees as both an honor and a responsibility, since you will be serving as the representative of your group and, by extension, your leaders. Most chief and chairs will expect you to serve on at least one committee to share the work of advancing your group's goals and being a good citizen, and they are likely to be frustrated with you if you turn down a committee membership that they have suggested. Especially as a junior faculty member, you are expected to say "yes," gracefully and gratefully, when asked to serve on any committee. Similarly, your leaders are likely to be upset if you do not attend committee meetings or are otherwise not engaged on a committee that makes decisions affecting your group. Committees exist to make decisions for the institution, and if your colleagues are not represented in the committee process because you did not attend an important meeting, the decisions are likely to be made by administrators or physicians from other specialties who do not share your group's interest. In decades past, it was expected and possibly acceptable for surgeons to routinely miss meetings due to clinical responsibilities, but this is no longer the case.

It is unlikely but not impossible that you may be asked to be asked to take responsibility for major projects of high importance to your institution while you are still a junior faculty member. If these opportunities do arise, they may be a set-up for failure unless you already possess strong project management skills, have good connections to relevant stakeholders in

your institution, and have the active support of leaders with widely accepted power and credibility within your institution. You are more likely to be successful at major projects after you have learned the processes and people through which policy happens in your institution, met and gained the trust of key stakeholders, and developed organizational and systems-thinking skills through active participation in meetings. By demonstrating your willingness and ability to take on difficult tasks which help your institution achieve its goals, you will have the opportunity to demonstrate leadership skills to administrators and your own chief and chair. With time and a track record of success, you will become a candidate when true leadership

CHAPTER 29:
Regional and Other Organizations and Meetings

Caroline Park, MD, MPH, FACS and
Samuel P. Mandell, MD, MPH, FACS

Background: There are several ways to get involved in regional organizations and Committee on Trauma ('COT') chapters and each region varies in scope and opportunities. We provide a background of COT and ACS regional systems, other national and regional meetings, positions, and pathways to national involvement.

5-Year Goals:

- Find your regional ACS chapter and become a member
- Get to know the region chair, the Region Chief and structure (varies)
- Be present, go to the meetings/present
- Apply for positions
- Mentor trainees in regional paper competition
- Apply for leadership, research opportunities and council membership

Goal Breakdown

Find Your COT Region and ACS Chapter

- There are 17 COT Regions (national and international)
- Each Region is divided into state based (or country) committees – learn more here
- There are over 100 domestic and international chapters. Each State has its own ACS Chapter or Chapters depending on size (for example, Texas has a North and South Component). Find out more about your individual chapter here

Other National Organizations and Meetings

- Society of Critical Care Medicine – Multidisciplinary organization focused on the critical care of the surgical patient. There are many educational and research/funding opportunities to members. Members have access to an extensive online library of toolkits, guidelines and other resources.
- Association of Surgical Education – Another multidisciplinary organization with an annual Spring meeting. Held concurrently with the Program Directors' meeting during 'Surgical Education Week.'

- Society of American and Gastrointestinal Endoscopic Surgeons – Diverse group of surgeons including minimally invasive, foregut, endoscopic and with an expanding cohort of acute care surgeons.
- Association for Academic Surgery – Great multidisciplinary conference for the junior academic surgeon with innumerable opportunities for committee involvement, mentorship, and leadership. Annual Congress is combined with Society of University Surgeons and is usually held in February.
- Society of University Surgeons – Closely linked to AAS, SUS is another high-yield, multi-disciplinary conference and geared more towards the mid-career faculty with nationally recognized mentorship, leadership and research funding opportunities.
- American Surgical Association – The premier academic surgical society. Rigorous membership process with membership consisting of giants in academic surgery.

Regional Surgical Associations or Meetings

- Western Trauma Association – Scaled-down trauma meeting while maintaining high-quality research presentations and discussion. Typically in snowy, mountainous regions in February.
- Mattox Conference – High-yield, packed trauma conference with a broad audience of pre-hospital, trauma and critical care providers; held each April in Las Vegas.
- Eastern Association for the Surgery of Trauma – Popular trauma conference for trainees, fellows and junior faculty with an emphasis on mentorship and networking. Affords numerous opportunities to participate in committees, contribute to practice management guidelines and multi-center trials.
- Southwestern Surgical Congress
- Southeastern Surgical Congress
- Pacific Coast Surgical Association
- Southern Surgical Association
- Central Surgical Association
- New England Surgical Society

Be Present

- Regions and state committees and chapters vary in activity, but most host an annual meeting
- Meetings may move between host institutions in each state
- Attend the meetings! They tend to be short (2 days) and high-impact
- Support resident paper competitions – great opportunity for trainees/fellows

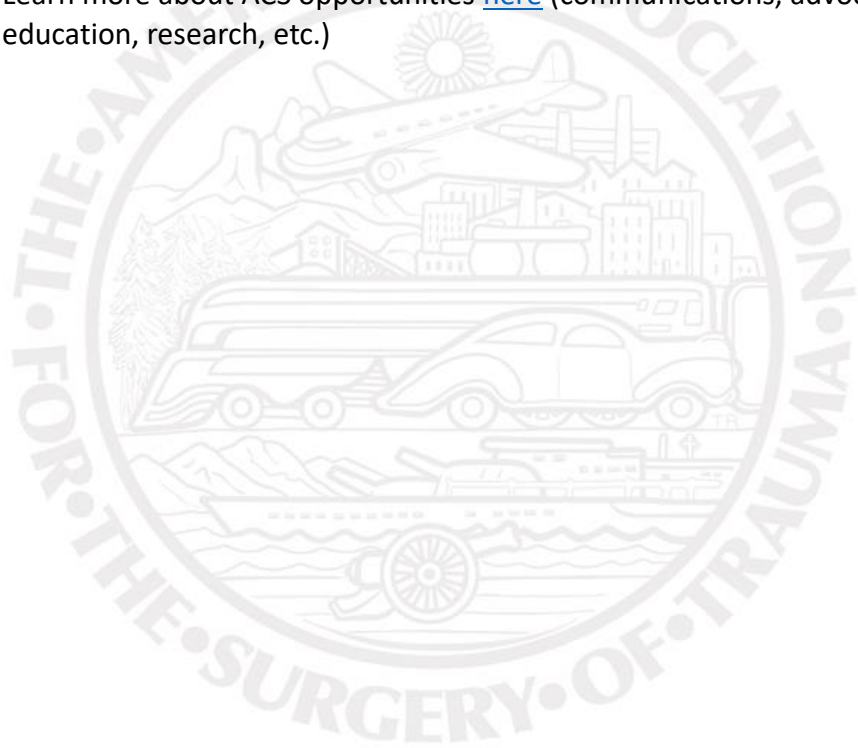
Sign up and Be Involved

- Regional COT meetings are held at the annual COT meeting (invite only). This is a great way to introduce yourself to other chapter leaders and collaborate
- Great way to get involved in collaborative research, learn about state policies and impact on programs
- Volunteer – If there is a project that interests you, volunteer or reach out to the project leader, do not assume that you are "too junior."

- ACS Chapter committee positions vary in scope and duration, usually 1-3 years

Apply for Positions – ACS and COT

- Learn more about COT membership Committee on Trauma
  - Member opportunities Opportunity Board
  - Can be achieved through Future Trauma Leaders Program or Young Fellows Association
  - Future Trauma Leaders: junior faculty < 5 years from fellowship. Deadline is early June FTL Program
  - Young Fellows Association: serve as a liaison between the American College of Surgeons and the Committee on Trauma – learn more here
  - Specialty Organizations also have liaisons – Hand, Orthopedics, Burns, Ophthalmology, Radiology
- Learn more about ACS opportunities here (communications, advocacy, education, research, etc.)



CHAPTER 30:
National Trauma Organizations and Meetings

Ara Ko, MD, MPH, FACS and David A. Spain, MD, FACS

The number of national organizations and meetings may seem overwhelming at first for new faculty, but it may be helpful to start with those that align with your interests and career goals. Every organization has its own strengths and drawbacks so give yourself a chance to learn and explore about them individually (see helpful resources below). The breadth and depth of your involvement in each organization and meeting is up to you, but as it is with most things in life, the greater the investment, the greater the return. Perhaps best of all, these national organizations and meetings can help create new, as well as further develop old relationships with colleagues and friends throughout your career.

Oftentimes, opportunities to attend national meetings may arise from abstract submissions that get accepted for presentation. If you have interesting studies you'd like to submit, it's helpful to have a timeline of the abstract deadlines and acceptance notification times for the year. The following are some, but not all, dates for some prominent societies (deadlines for each society is around the same time every year but please refer to the respective websites for specific dates annually):

Society	Deadline	Notification of Acceptance
AAST	February 15th	April
ACS	March 1st	May
EAST	July 1st	August
WTA	September 4th	October

You may also find yourself attending these national meetings once you've become a member, as a moderator or discussant, for professional development courses (fundamentals of research course, grant writing, leadership), or to attend committee meetings and activities. They are great venues for research inspiration, up-to-date practice guidelines and tips, collaboration, and career development.

Membership:

The value of membership in national organizations includes, but is not limited to, having a networking group of surgeons and providers in your specialty, mentorship opportunities, access to educational content, scholarship applications, opportunities for abstract submissions and presentations at annual meetings. Specific membership requisites for new faculty applying to

AAST and ACS are outlined below. Additional information about EAST and the Western Trauma Association can be found in the AAST/SCCPDS/EAST Navigating Surgical Critical Care Fellowship Successfully and Beyond Handbook as well as in their respective websites.

The AAST:

The American Association for the Surgery of Trauma, founded in 1938, was established to further the study and practice of trauma surgery. In 2019, the AAST opened its membership to include surgical residents, fellows, and attending surgeons within 7 years of completing training through the Associate Membership. Applications are available to complete online and requires the following:

1. An essay about your interest in the field
2. A copy of your curriculum vitae
3. A cover letter
4. Two letters of support/recommendation from active members
5. A current photo

Applications are due on July 1st with notifications of acceptance sent out around October. After 7 years of completing training, associate members are required to apply as an Active Fellow to maintain their membership. This application involves all of the above, but includes 3 letters of support from active members (1 sponsor, 2 endorsers) as well as a list of trauma-related activities within the past year instead of an essay about your interest in the field.

The ACS:

The American College of Surgeons is the largest and most robust surgical organization in the world, encompassing all surgical specialties and over 84,000 members. One can become a member as a medical student, resident, and associate fellow (for early career surgeons <6 years in practice). To become a Fellow of the American College of Surgeons (FACS) once you are board certified and in practice, you must submit an application, provide a 12-month list of your surgical cases, and participate in an interview with your local College committee.
Applications are available to complete online and requires the following:

1. Information about your medical education and surgical training
2. Medical license
3. Certification by an American Surgical Specialty Board or by the Royal College of Surgeons of Canada
4. A current appointment at a hospital on the surgical staff
5. Names of three references (two must be active Fellows of ACS, one must be your chief of surgery)
6. A copy of your curriculum vitae

Applications are due on December 1st annually, though the whole process can take up to one year. Your 12-month surgical list can be uploaded in your online ACS profile and should include dates of service and a description of the procedures. It should not include any patient identifiers or billing information. The interview with the College committee will only be offered

once all documentation and responses from your references are complete. Once approved, you will be invited to the Convocation Ceremony held at the annual Clinical Congress in October.

Committees:
Membership may be the first step to getting involved but not the last. These national organizations often function through the hard work and dedication of committee and subcommittee members. Joining a committee can occur as easily as volunteering and signing up, though some may require appointments or elections. Depending on your interests and expertise, you can join committees that focus on topics including (but not limited to) education, scholarship and awards, multi-institutional trials, prevention, disaster, international relations, communications and social media. When given an opportunity to contribute, step up to the plate, do the work, and most importantly, follow through. Members who consistently deliver will be remembered, more likely find sponsorship, and given more responsibility should they choose to get more involved in leadership. In these committees, a common mission can promote community and open new opportunities for your career.

Helpful Resources:
1. https://www.aast.org/
2. https://www.facs.org/
3. https://www.east.org/
4. https://www.westerntrauma.org/
5. https://www.aast.org/membership/join-aast/associate-members/publications

SECTION VII:
Navigating Your Early Career as a Military Surgeon

Section Editor: Joshua Dilday, DO

CHAPTER 31:
Navigating Military Civilian Partnerships

Mike Derickson, MD, Brian Gavitt, MD, MPH, FACS
and Matthew D. Tadlock, MD, FACS

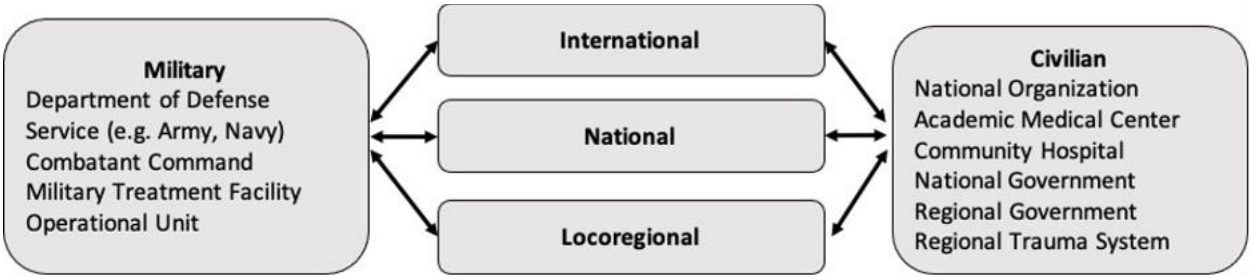
Introduction:

Practicing at a military-civilian partnership (MCP) is both a privilege and an opportunity for military trauma surgeons. MCPs allow active-duty clinicians to maintain deployment-readiness through access to high-volume, high-acuity trauma care not present in most military treatment facilities (MTFs). While this chapter is directed at trauma surgeons, trauma care is a team sport, and trauma surgeons must advocate for the entire military trauma team to be engaged in robust trauma care; this will often require surgeons at MCPs to interface between military and civilian leadership to ensure viable and enduring partnerships.

Military-Civilian Partnership Models:

There are many MCP models, and the structure of each relationship depends on the goals and needs of both partners. This highlights the flexibility and diversity of MCPs, and how each relationship can be molded to be mutually beneficial to both parties. **Figure 1** provides examples of the parties that participate in MCPs and the scope of the relationships.

From a functional standpoint, there are three general categories of clinical MCPs: *Just-In-Time Training MCPs*, *Integrated MCPs*, and *Skill-Sustainment MCPs*. Just-In-Time Training MCPs allow military providers, usually as a team, to be exposed to trauma training and clinical care through didactics, cadavers, or simulation at civilian trauma centers immediately prior to deploying. These experiences are facilitated by an embedded cadre of multidisciplinary military providers, typically involving trauma surgeons, emergency medicine physicians, nurses, and anesthesia providers. Each Military Service has long-standing, national-level partnerships using this model including the Navy Trauma Training Center in Los Angeles, the Army Trauma Training Center in Miami, and the Air Force C-STARS (Center for the Sustainment of Trauma and Readiness Skills) sites in Baltimore, St. Louis and Las Vegas (*J Trauma*, 2022. 92, e57-e76).



In skill-sustainment MCPs, military caregivers gain clinical trauma exposure by rotating intermittently at a civilian trauma center. Skill-sustainment MCPs are usually developed and managed at the locoregional level. Finally, integrated MCPs involve military providers being assigned to work full-time in civilian trauma centers in between deployments, typically serving as clinical faculty for trainees; the Army Military Civilian Trauma Team Training (AMCT3) sites are an example of this type of partnership. Depending on the nature of the partnership and the duration of the assignment, trauma surgeons will have the opportunity to be appointed as clinical faculty at the civilian institution in order to teach both military and civilian trainees; the MCP between David Grant Medical Center and the University of California, Davis is a good example of this model (*J Trauma*, 2022. 92, e57-e76).

Career Development

There is no standardized definition of a "full-time clinical trauma surgeon" across institutions (referred to as a full-time equivalent or FTE). Every center develops their own standards over time, and DoD members are expected to comply with the center-specific standards. While each defined FTE may differ based upon the specific MCP, the assigned embedded trauma surgeon is expected to comply with the standard set by their institution. It is important to understand your Commander's (or equivalent) expectations upon arrival at an MCP; many sites have negotiated clinical FTE ceilings (i.e. 0.5 FTE) to allow members to meet military-specific training/teaching requirements. It is worth noting that off-duty employment (ODE) does not replace duty obligations at MCPs; military surgeons must coordinate all ODE with their local Command in order to ensure compliance with Service-specific regulations and to avoid creating conflicts of interest with civilian partners.

Surgeons at MCPs should seek to maintain proficiency across the full spectrum of acute care surgery (trauma, emergency general surgery, and surgical critical care). It is also wise to seek experience in disciplines like obstetrics, burns, vascular surgery, neurosurgery, orthopedic surgery, and pediatric surgery as each of these skill sets can be lifesaving in the expeditionary environment. Also, it is impossible to understate the importance of developing robust critical care rescue skills with modalities such as Extracorpeal Membrane Oxygenation (ECMO) and Continuous Renal Replacement Therapy (CRRT); these are useful in both the ground and enroute care settings to manage critically ill patients. Leveraging the resources of an MCP to develop broad expertise across multiple disciplines will improve military members' ability to accomplish the downrange mission.

Finally, every trauma surgeon can pack a liver; few have organized and managed an integrated trauma system. This lack of trauma systems-based experience is one of the most worrisome risks in future conflicts. In the next conflict, trauma surgeons will be expected to build and manage a complex system of trauma care from point-of-injury to reintegration. Trauma surgeons typically gain systems-level experience after achieving clinical competency, and most commonly by progressing through the roles of Assistant (or Associate) Trauma Medical Director to Trauma Medical Director (TMD) at an American College of Surgeons verified trauma center. This progression develops competency in managing meticulous performance improvement processes both at a center and a regional level. They also allow surgeons to

interface with prevention activities, prehospital trauma care, and regional collaborative activities to improve outcomes after injury. This same dynamic exists in an expeditionary environment, albeit with a different authority structure. Experience working in a CONUS (Continental United Sates) trauma system is critical in preparing members for their role as a trauma system leader in the expeditionary environment – a point that cannot be understated. MCPs should be incubators for trauma systems experts and involved military surgeons should seek mentorship and leadership roles within stateside trauma systems to prepare for the demands of the expeditionary setting.

Resources & Further Reading:

Table 1 lists resources for developing a new MCP. The list is by no means comprehensive, but demonstrates different partnership models that have been successful or provide broad MCP overviews. Perhaps one of the most valuable resources is the "Blue Book," developed through the Military Health System Strategic Partnership with the American College of Surgeons. The Blue Book: Military-Civilian Partnerships for Trauma Training, Sustainment, and Readiness provides guidance and information for MCP site selection, initial development, sustainment, and quality evaluation of MCPs.

Table 1: MCP Resources & Further Reading

MCP Resource	Key Points
The Blue Book: Military-Civilian Partnerships for Trauma Training, Sustainment, and Readiness	Provides guidance for development and sustainment, site selection, institutional commitment, governance, administration, required human and physical resources, and criteria to evaluate the quality of new and well-established MCPs
Thorson et al., Military trauma training at civilian centers: A decade of advancements. Journal of Trauma and Acute Care Surgery 73(6):p S483-S489, December 2012.	Excellent review of the development of MCPs from the 1990's to 2012 with a particular focus on the Army, Navy, and Air Force programs providing just-in-time pre-deployment trauma training for teams
Hight et al., Level I academic trauma center integration as a model for sustaining combat surgical skills: the right surgeon in the right place for the right time. Journal of Trauma and Acute Care Surgery. 2015 Jun 1;78(6):1176-81.	Excellent description of Integrated Partnership Model involving both active-duty attending staff and residents.

Lee et al., Integrated military and civilian partnerships are necessary for effective trauma-related training and skills sustainment during the inter-war period. Journal of Trauma and Acute Care Surgery 92(4): p e57-e76, April 2022.	Systematic MCP literature review. Proposes defining MCP as strategic, just-in-time, skills sustainment, and integrated based on their structure and goals. Argues that just-in-time training is the least effective model for maintaining caregiver clinical skills
Three New Military-Civilian Partnerships Combatting the Peacetime Effect | ACS	2022 Excelsior Surgical Society Newsletter Article describing three new developing partnerships including the International MCP between the United States and United Arab Emirates.
Sheldon et al. Case Volume and Readiness to Deploy: Clinical Opportunities for Active-Duty Surgeons Outside of Military Hospitals. J Am Coll Surg. 2023 Aug 1;237(2):221-228.	Describes a holistic model where case volume from the military treatment facility, two different MCPs, and ODE are incorporated to measure individual surgeon readiness at Womack Army Medical Center
Rokayak et al. The 16-year evolution of a military-civilian partnership: The University of Alabama at Birmingham experience. Journal of Trauma and Acute Care Surgery 95(2S):p S19-S25, August 2023.	Example of an integrated model that also trains a large number of combat medics annually

Military Bearing:
Trauma surgeons performing duties outside an MTF are in a position of trust. The military trusts members to represent their respective service well in all aspects of their duties. Dress and appearance will have less direct oversight at an MCP, but that does not absolve the member from maintaining them. Members must still maintain physical fitness standards and demonstrate appropriate customs and courtesies. Failure to maintain these marks of officership could very well result in a revocation of the privilege to practice at an MCP.

Trust, Reliability, and Stability:
Assignment to work at an MCP is a privilege, and surgeons afforded this privilege must leverage the opportunity to ensure they are deployment-ready. Do not betray the trust of your military leadership or that of the leadership of the civilian trauma center. MCPs function best where there is stability and predictability; the foundation for successful MCPs depends on reliable military clinicians to efficiently communicate regarding military training and deployments. Surgeons at MCPs are engaging in small-scale DoD diplomacy where trust and communication are the currency of the relationship; maintaining these relationships are in the hands of those assigned to them, and the wise surgeon will leave a legacy of building stronger, more robust relationships that will continue to serve their colleagues for years in the future.

CHAPTER 32:
Preparing for Deployment as an Attending

Benjamin Franklin, MD, and Matthew J. Martin, MD, FACS, FASMBS

Background:
Transitioning to a new attending surgeon is filled with changes and new challenges. The new military surgeon will see additional associated challenges, as the promotion to "attending surgeon" likely means a deployment is looming. In preparation for one's first deployment, it is crucial to be clinically, mentally, and emotionally proficient in preparation for the upcoming challenges. This chapter aims to serve a preparatory guide of the essential steps to ensure readiness for an upcoming deployment.

Pre-deployment:

1. Clinical Proficiency

The military mission won't wait for completion of "on the job training" – personal surgical readiness must be obtained by the time the "boots hit the ground". The deployed Soldiers/ Airmen/Sailors/Marines will be proficient in their assigned roles, and they will expect their surgeon be the same. As a general rule, one should prepare for impending deployment just as rigorously as one would prepare for the surgical certifying board exam. Below are some examples on how to prepare for the clinical proficiency that is expected of the deployed military surgeon

Analyze current deficiencies

- Identify biases in previous surgical education focused on resources that may not be available on deployment (robotic platforms, laparoscopy, energy devices for vascular control, etc…)
- Seek out cases and procedures that are deployment-relatable. For example, conceptualize how to perform the surgery in an austere environment. Learn how to do a surgery without an energy device. Practice being a "minimalistic" surgeon assuming all resources are limited (i.e. types of suture, staplers, wound dressings, etc…)

Focus on mastery

- The deployed surgeon, especially one trained in trauma/surgical critical care, will be viewed as the local expert in trauma exposure and damage control surgery. The surgeon should be comfortable performing an exploratory laparotomy for penetrating abdominal trauma and facile at shunting and repairing vascular injuries.
- Train as if consulting services are not available. Avoid the urge to hand off bladder/ureter repairs to urology and vascular repairs to vascular/endovascular surgeons as consulting/ specialty services are often not available to help during the initial operation in the deployed

setting. Prepare for battlefield surgery before deployment by participating in the case and learning techniques from the subspecialty experts.

- Compile a list of common trauma procedures and exposures to complete in order to gain proficiency. For example, injuries to the subclavian/axillary/brachial/femoral/popliteal arteries, trachea, liver, pancreas and other less commonly seen anatomic structures may be present on the battlefield. Take the opportunity to scrub into these cases now if you know other surgeons are taking them to the operating room. The more one sees/performs before deployment, the more facile one will be on deployment.
- Gain expertise in trauma adjuncts. The deployed surgeon should be an expert at point-of-care ultrasound/eFAST, damage control resuscitation, and initial surgical critical care management.
- Prepare for what will be seen
- Familiarize yourself with the clinical practice guidelines (CPGs) published by the Department of Defense Joint Trauma System. These are available online https://jts.health.mil/index.cfm/PI_CPGs/cpgs. Although individualizing your treatment to each specific patient is required, medical care provided during deployment will be audited to ensure adherence to the guidelines. It is critical to review the pertinent surgical and trauma CPGs to include whole blood transfusion, damage control resuscitation, and (austere) resuscitative surgical care before deployment. It is recommended to download the applicable CPG's on a portable device.
- Take advantage of pre-deployment training events such as the Emergency War Surgery Course (EWSC), Army Trauma Training Course (ATTC), or courses at the Navy Trauma Training Center (NTTC). The EWSC is focused on training individual surgeons and is a good refresher for austere trauma surgery care. ATTC/NTTC training is conducted by the full team and will allows assessing team for dynamics. Engage in surgical exposure courses such as ATOM/ASSET/ASSET+ close to the deployment date.

2. Military Proficiency

While the main job on deployment may be as a surgeon, it is important to remember that surgeons are officers and essential members of the military community. Thus, military bearing will be expected and should be maintained at all times. Having the role of "surgeon" does not resolve the service member from the role of "officer". Remembering this point is essential for deployment preparations.

Physical fitness

- Prepare for the physical requirement of deployments before landing in the austere environment. Be able to pass the physical fitness test of the respective branch of service. Get comfortable caring a heavy load (i.e. backpack, ruck sack, medical bag). Ensure military boots are broken-in and fit well.

Rules of Engagement

- Understand military hierarchy and chain of command. While these can become blurred among the medical team, the commander will still be in charge. Also, the surgeon will be

looked to as a leader and should be familiar with military customs/courtesies among the local unit.
- Familiarize yourself with military medical protocols and procedures, including casualty evacuation and field triage in the area. Knowing the local tactical environment will help tremendously
- Know the rules of engagement and the Geneva Conventions as they apply to medical personnel. These should be briefed before deployment, but remember to act as an ethical surgeon within the confines of the defined rules of engagement.
- Learn about the culture and customs of the host nation. Learn basic phrases in the local language to facilitate communication with patients and colleagues.

3. What to Bring

The austere environment will, by definition, lack the creature comforts of home. It is essential to brings equipment that will be mission critical. However, not everything can be brought. Pack heavy and pack light. Mail things to the deployed location ahead of time. Although mail delivery to austere locations has improved in the last several years as deployment locations have become more established, delivery may still take a month or more. Additionally, most websites will not ship some items overseas, such as lithium bakeries, aerosols, and liquified petroleum canisters. If possible, utilize the unit's shipping container, but take care to not pack essential equipment. Below are some examples of what to bring to help with the mission and the day-to-day deployment experience.

Medical Equipment

- Take a laptop computer and a portable device with PDF copies of trauma and surgery textbooks; there is no need and not enough space to take full paper books, with the exception of Top Knife. You should read Top Knife cover to cover at least once a month on deployment, and you should be able to quote the book.
- Lighting in austere locations may be essentially non-existent. Take a high-quality battery powered surgical headlamp. If you do not have a true surgical headlamp, consider purchasing a recreation-grade LED headlamp with a light output around 1,000 lumens. Many of the brighter headlamps and flashlights use lithium-ion batteries, which stores will not ship to overseas locations.

Military Equipment

- Military clothing and equipment should be location and weather specific.
- Your issued military body armor, helmet, protective mask, and uniforms are critical items that you must take. For other items, asking peers or unit members can help one decide what can safely be left at home. Reach out to deployed members currently in the region for their advice. If you are authorized to wear civilian clothes, take items appropriate for wear. Do not bring clothing displaying profanity or objectionable items.

Comfort

- Take several items to improve your quality of life and repair/improve your location.
- Take a cellular phone, knowing that international cellular plans vary amongst cellular providers and may not be available or worth the cost. Access to wi-fi/internet access will depend on the location, but is usually at least intermittently reliable.

- Consider downloading movies, shows, books, and music, on a personal device. Consider taking a portable videogame device.
- Pack only a minimal amount of toiletry/hygiene products and laundry detergent. Purchase more in in country or enroute.
- Consider creature comforts such as hammocks, blankets, sleeping mats, shower bags, camp stoves, and camp chairs. These items can make the days more comfortable and can help build camaraderie amongst peers.
- Consider manual/power tools, hand clothes washer, and radios/walkie-talkies.

<u>While Deployed</u>:

Medical Roles

- Cross train other members of the team to do the surgeon's job.
- Teach and mentor junior soldiers and service members, including those from other collocated units. Train the other members of the medical and non-medical team to help during surgical scenarios.
- Be ready to provide impromptu teaching and scheduled lectures or presentations.
- Learn how to help other specialists (orthopedics, anesthesia, CRNA's).
- Be an expert on the local medical environment. Know the stored blood supply, the expiration dates, and times for blood resupply at all times. Do not delegate this task to others. Become familiar with how to use and maintain all the medical equipment – especially the Belmont rapid blood infuser (OPERATOR'S MANUAL (belmontmedtech.com)

Military Roles

- While deployed, one can be friends with fellow members of the team. However, always keep conduct in accordance with the Uniform Code of Military Justice (UCMJ) and military regulations.
- Do not fraternize of engage in inappropriate relationships. A deployment is not the place to fall in love or compromise one's (or another's) marriage.
- Alcohol is prohibited for U.S. forces, but it still may be available. Do not partake of alcohol or other banned substances on deployment.
- The surgeon will be viewed as a leader and role model for junior soldiers and servicemembers. Keep all conduct exemplary. Even the appearance of impropriety should be avoided.
- Do not take any action that would embarrass one's family, the profession, the U.S. military, or the nation.
- Set the example of a positive work and living environment. Embrace the fact that other roles will be assigned to the surgeon (janitorial work, paperwork, security, maintenance, etc…). A good attitude is a force multiplier.
- Follow the command climate, but learn when (and how) to advocate for the team and patients.
- Tactfully help the command team understand the medical situation; humbly recognize the tactical climate and its effect on the medical environment.

Conclusion:

A new attending surgeon's first deployment will be a challenging and potentially rewarding experience. Preparation is key to success and the impending task should not be viewed lightly. The surgeon is an integral part of any deployed setting and should simultaneously assume the role of medical expert and officer. The time will prove extremely valuable to one's military and medical career. Remember the opportunity to take care of those in need is both a privilege and honor. Deploying to combat so that others may return safely will automatically enshrine a new surgeon into a fraternity unlike that of any other.

CHAPTER 33:
Navigating National Organizational Positions as a Military Member

W. Jason Butler, MD, FACS and Matthew D. Tadlock, MD, FACS

Introduction:

Newly practicing surgeons in the military face unique challenges and opportunities in their careers. To successfully navigate this complex landscape, it's essential to leverage resources and support networks. National organizations such as the American College of Surgeons (ACS), American Association for the Surgery of Trauma (AAST), Eastern Association for the Surgery of Trauma (EAST), Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), the Excelsior Surgical Society (ESS), and military organizations like the Joint Trauma System (JTS) offer invaluable benefits to military surgeons (Table 1). This guide explores the advantages of joining these organizations and provides insights on balancing military commitments with organizational involvement.

Table 1. Societies with Military Specific Forums and Opportunities

Organization	Military Specific Opportunities
ACS	Excelsior Surgical Society with annual symposium and dedicated military scientific abstract sessions
AAST	Military liaison committee and military pre-session Military scholarship to attend annual meeting
EAST	Military Ad Hoc Committee Military scholarship to attend annual meeting
SAGES	Military Committee Military specific session during annual meeting Military specific abstract sessions
Society of Critical Care Medicine	Military Committee
Association of Academic Surgery	Military Committee Military scholarship to attend annual meeting Military specific abstract sessions
Association of Military Surgeons of the United States	Society focused on leadership development and strategic planning for military surgeons

Before Joining:

It is important to consider several factors before joining national surgical societies. Be strategic and pragmatic in selecting the organization that best fits your professional and personal needs. Start with an evaluation of five- and ten-year professional goals. Also, consider your personal and family goals. When making the final decision to become involved, determine if the selected organization aligns with your goals and passions (e.g., advocacy, research, outreach, deployment, etc.)

Benefits of Joining National Organizations and Opportunities for Involvement:

Professional Development

Membership in national organizations can provide access to cutting-edge research, clinical guidelines, and educational resources. To provide high level, evidenced-based care in a deployed setting, it is crucial for military surgeons to stay updated with the latest advancements in trauma, critical care, and acute care surgery. These various resources can also keep the surgeon abreast of recent surgical advances relative to elective and garrison-based practices. Organizational conferences, workshops, and webinars offer opportunities to enhance surgical skills and prepare for surgical challenges in both austere and domestic environments. Several organizations even host military-specific forums (Table 1). The JTS offers opportunities for working with senior military general and trauma surgeons to write clinical practice guidelines, receive mentorship, develop subject matter expertise, and contribute to doctrine and policy development.

Networking Opportunities and Mentorship

Building a professional network is essential for career growth. Several organizations offer specific programs and opportunities for military surgeons to connect with peers, mentors, and experts in their field. A few examples include:

- AAST Associate Membership
- AAST Associate Member Mentoring Scholarship
- AAST Trauma Surgery Acute Care Open Peer Review Mentorship Program
- EAST Executive Leadership Coaching and Mentoring Program
- EAST Peer Review Mentoring Program
- EAST Mentoring Family
- American College of Surgeons Committee on Trauma Future Trauma Leaders Program
- Excelsior Surgical Society (ESS)

The potential for mentorship is one specific benefit of the networking opportunities societal memberships can provide. Finding mentorship aimed at developing one's career goals is a crucial part of making the most of these opportunities. Mentors can be multifaceted, and may be able to provide insight into both military and civilian practice. Finding multiple mentors can increase the overall benefit, and it is best to diversity mentors across institutions. Avoid using professional society mentorship as a substitute for local mentorship. Finding civilian mentors should not be overlooked, as they may help with the transition into civilian practice.

Research and Publication

Participation in national organizations can facilitate research collaboration and publication opportunities. Early career military surgeons can benefit from the wealth of knowledge within these organizations to contribute to the advancement of surgical science. National organizations also award various research scholarships and host grant writing workshops to help early career surgeons further the pursuit of their research interests. Published research can enhance military surgeons' academic profiles and open doors to further career opportunities at the conclusion of military service.

Advocacy and Leadership Development

ACS, AAST, EAST, and ESS actively advocate for trauma care and surgical education. Joining these organizations allows military surgeons to engage in advocacy efforts and develop leadership skills, which are applicable to both the military and civilian sectors.

To maximize membership benefit, early career military surgeons should seek out opportunities for organizational committee involvement. Many committees provide opportunities for military surgeons to actively engage and contribute their expertise in specific areas of interest with like-minded professionals.

Balancing Military Commitments with Organizational Involvement:

Balancing military commitments with involvement in national organizations may pose challenges, but it's feasible with careful planning and clear communication:

- Efficient time management is key. Military surgeons should prioritize military duties while allocating dedicated time for organizational involvement, recognizing that military obligations may take precedence at times.
- Be flexible and adaptable when scheduling organizational commitments.
- Identify at least one deliverable from committee or professional society engagement. Avoid overcommitting and failing to deliver.
- When unplanned operational commitments and deployments come up, clearly communicate this to whatever committee or organization you are supporting. However, some deployments offer the opportunity to increase involvement if you have reliable internet access and email.

In addition to in-person opportunities, leverage available online resources particularly when stationed or deployed to remote locations. Some organizations (e.g. AAST and ESS) offer webinars and virtual meetings in order to promote engagement.

Conclusion:

Joining national organizations such as ACS, AAST, EAST, SAGES, JTS, and the ESS can significantly benefit early career military surgeons. These organizations offer opportunities for professional development, networking, research, and advocacy. Balancing military

commitments with organizational involvement requires effective time management and flexibility. Becoming active in national organizations isn't just an opportunity to further your own career. Networking and military ambassadorship can provide future partnership opportunities in research and clinical domains. Ultimately, active national organization can enhance a military surgeon's career while improving the delivery of both military and civilian trauma and surgical care.

SECTION VIII:
What To Do When Things Don't Go According To Plan

Section Editor: Lindsey L. Perea, DO, FACS

CHAPTER 34:
Getting Negative Feedback or Discipline

Katherine Kelley, MD and Joseph Dubose, MD

Starting as a term for mechanical systems and later applied to electrical circuits, *feedback* became a term for interpersonal communication geared towards performance improvement after World War II.[1] Feedback can be challenging to both give and receive, however, being able to receive negative feedback well as well as actively seeking it out leads to increased job success.[1] Attempting to avoid negative feedback leads to decreased leadership effectiveness.[2] In medicine this feedback can come from evaluations by trainees, coworkers and supervisors, patient reviews, and direct disciplinary action. Regardless of the source, to get the most out of it, feedback needs to be understood, assessed, and acted upon.

When processing negative feedback, you first must understand it. Tasha Eurich writes that the first steps in responding to negative feedback are "don't rush to react" and "get more data."[3] In their book "Thanks for the Feedback: The Science and Art of Receiving Feedback Well", authors Stone and Heen discuss the importance of asking clarifying questions. They also explain that terms and labels can mean different things to different people, therefore, requesting examples can help to gain a more comprehensive understanding of what the feedback giver means.[1]

Not all feedback is accurate and assessing the validity of feedback is important prior to making changes. This does not mean ignoring feedback that we do not want to hear. Emotional responses to feedback are normal and it is okay to take time to process those emotions before thinking about the details of the feedback.[4] Feedback may be accurate but something the receiver has not previously seen or heard because it is in a blind spot. Identifying such can be done by looking for patterns in feedback or asking someone we trust to provide an honest assessment.[1]

Once you understand and accept feedback you need to take action. In making the effort to improve, it can be important to think about your response to feedback as a "second score". Your first score was how you did at work prior to the evaluation while the second score is what you do in response to the feedback.[1] Sometimes there are several things that can be improved upon. It can be beneficial to ask a supervisor for the one most important thing to focus on first.[1] Another important part of responding to feedback is having the response seen and appreciated by those with whom you work. Eurich discusses that you should "find a harbinger".[3] In medicine this could mean spending extra time explaining things to nurses to improve their perception of respect for their opinions. In this case it is not enough to have the respect, they must also see it in action.

Patient feedback in the form of evaluations, whether anonymous or posted online, can be a unique and challenging type of feedback. Even a disproportionately small number of negative reviews can have a significant impact on both emotions and, if published online, on the medical practice. Particular attention must be taken if considering a response online. Comments should be left generic in response to how care is done at the practice and never directly state that the patient was seen in the office or what occurred as this is a HIPAA violation.[5,6]

Disciplinary action in a hospital falls under the purview of the Medical Executive Committee (MEC). This can occur for clinical or behavioral reasons. The first level is a corrective action which can range from a warning to required additional training or proctoring to as serious as reduction or termination of privileges. Reduction of privileges for clinical reasons generally must be reported to the state as well as the National Practitioner Data Bank. After a corrective action there can be judicial review hearings and appeals processes. If facing any disciplinary action, malpractice attorneys can be consulted although may not be allowed to attend MEC meetings and hearings.[7] It is important to remember that disciplinary action is just a stronger form of feedback and similarly needs to be processed, understood, and acted upon. Mentors both at the same institution and at outside institutions can help with these steps.

Helpful Resources:

1. Stone D, Heen S. *Thanks for the Feedback: The Science and Art of Receiving Feedback Well (Even When It Is off Base, Unfair, Poorly Delivered, and Frankly, You're Not in the Mood)*. New York, New York: Penguin Books; 2015.
2. Folkman J. You Can Take It! How To Accept Negative Feedback With Ease. Forbes. https://www.forbes.com/sites/joefolkman/2017/12/05/you-can-take-it-how-to-accept-negative-feedback-with-ease/. Accessed September 14, 2023.
3. Eurich T. The Right Way to Respond to Negative Feedback. *Harv Bus Rev*. May 2018. https://hbr.org/2018/05/the-right-way-to-respond-to-negative-feedback. Accessed September 14, 2023.
4. Career Experts on Handling Negative Feedback. The Muse. https://www.themuse.com/advice/this-is-how-you-handle-negative-feedback-according-to-career-experts. Published January 27, 2017. Accessed September 14, 2023.
5. PatientPop. How to respond to negative patient reviews and other feedback. PatientPop. https://www.patientpop.com/blog/the-best-way-to-respond-to-negative-online-reviews/. Published June 2, 2022. Accessed September 14, 2023.
6. Vanderpool D. What Can I Do About a Negative Online Review? *Innov Clin Neurosci*. 2017;14(5-6):31-32.
7. What Every Physician Needs to Know About Medical Staff and Other Types of Disciplinary Proceedings. http://www.peerreview.org/hospital/what_every_physician_should_know.htm. Accessed September 14, 2023.

CHAPTER 35:
When You Are Forced to be Involved in the Legal System

Rachel L. Choron, MD, FACS and
Matthew J. Martin, MD, FACS, FASMBS

Forced involvement with the legal system during clinical practice can often be a time of fear and anxiety. It may bring on feelings of self-doubt regarding your clinical abilities depending on the situation. It may be that you are to give a deposition for a case that you are not named in, or you may be a named defendant. Sometimes these cases come about from time in training, they may be during your first few years as an attending, or even come later on in practice. At times you will be subpoenaed to appear in court as a witness for a patient who was a victim of some sort of crime. Understanding ways to prevent legal involvement, and also familiarizing yourself with the terminology used, can help you to navigate through the process.

Legal Involvement Prevention:

1. **Scope of Practice:** Know and operate within your scope of practice.
    a. Be familiar with your appointment and hospital privileges (ie. What procedures/operations do you have privileges to perform?)
    b. Stay current and up to date on current standards of care.
2. **Informed Consent**: Whenever possible, get and document informed consent.
    a. Make a record of obtaining informed consent. Besides the hospital's basic consent form, if you think a patient may be at increased risk for specific complications, it may be prudent to document conversations regarding informed consent in your note. Discuss the treatment options along with the risks and benefits associated with each option along with the risks of declining treatment.
    b. If informed consent is not possible because a patient is unconscious or in an altered mental state, document the patient's inability to consent and the facts related to the emergent nature of the procedure.
3. **Documentation:** Document, Document, Document! Assume every one of your notes may be reviewed one day. Ensure all documentation remains professional. Never write anything discriminatory, derogative, negative, or libelous about a patient. Ensure documentation is complete and accurate. With electronic medical records (EMR) the documentation can be traced to the time/ date and author for every aspect of a note.
4. **Bedside Manner:** Compassionate, empathetic, and thorough bedside care goes a long way! Be open, honest, and transparent to invite communication and questions. Do not avoid patients who have complications, see them more often!

While these strategies should be employed in practice to minimize involvement in medical legal systems, by age 45, 36% of physicians in low-risk specialties and 88% of physicians in high-

risk specialties have had one malpractice claim. By age 65, that increases to 75% and 99% respectively. If you get notice of a legal claim, you are not alone!

Terminology:

Complaint: Lawsuit
Plaintiff: Patient
Defendant(s): Physician and/or Hospital
Civil Suit: A private attorney is retained by the patient (or their estate) and files a civil complaint which will be defended by an attorney selected from your insurance company or hospital system (unless you're self-insured). Civil cases can result in monetary judgement. Additionally, they can also go to court before a jury.
Criminal Suit: A municipal prosecutor, county prosecutor, or state attorney general would file the criminal claim with the municipality, county or state being the plaintiff and the alleged criminal is the defendant. Criminal cases can result in fines or imprisonment.
Deposition: A witness's sworn testimony, that is obtained outside of court. This is often performed during the discovery phase of the lawsuit. This can be disclosed during a trial.

Not all communications from attorneys are lawsuits.

1. Prior to responding to any correspondence from a potential plaintiff attorney, check with your risk manager, insurance company, or defense attorney.
2. Do not express opinions about a patient's care from your treatment team or someone else's. Do not express opinions that are not already within the medical record.

Notice of Claim or Litigation Hold Notice:

If you receive a notice of claim or a litigation hold notice, this is a notice of potential legal claims that is presented to you indicating a legal claim may be brought forward in the future.

1. All notices and claims should be immediately forwarded to your insurer, risk manager, and/or defense attorney with request for return receipt. This communication should be protected by Attorney Client and Work Product Privileges.
2. You must respond to a Notice of Claim or Complaint within a given time period, or a default judgement could ensue.
3. You must preserve all relevant information that is related to the legal claim in question and do not modify or delete it. Information and documents maintained on personal devices (computers, tablets, cell phones etc.) or storage mediums (cloud-based servers, CD, DVD, etc) must be considered. There is no distinction between official vs personal files. Relevant information to the legal claim could include:
    a. Internal or external emails, voicemails, text messages, pages, or social media communications
    b. Schedules or calendar entries
    c. Photographs, audio recordings, video recordings
    d. Letters, notes, presentations

4. Do NOT change, edit, or alter any aspects of the medical records or other documentation. Do not enter into the patient's chart in any capacity after receiving communication from an attorney, etc. regarding a possible lawsuit/ deposition.
5. Do NOT investigate the case.
6. This is CONFIDENTIAL. Do not discuss the information related to the claim or patient's experience with anyone other than your attorney.
7. Familiarize yourself with your professional liability insurance and what the contract will pay for and what the limits are.
    a. Liability insurance often does not pay for EMTALA violations.
    b. They may not pay for illegal behavior.
    c. They may not pay if you hire your own private attorney.

Once a Complaint Is Filed in Court:

1. Your attorney will file a response on your behalf.
2. A period of discovery will then occur where requests are made from the plaintiff's attorney and your attorney for items of information which can include interrogatories or documents.
3. A deposition will then take place which is a testimony under oath.
    a. This may require several meetings with your attorney to prepare in advance.
    b. The deposition will often be videotaped, so physical presentation is also important.
4. Expert witnesses will be selected by both plaintiff and defendant attorneys, you may be asked for input regarding expert selection.
5. Alternative Dispute Resolution (ADR) may occur where an arbitrator or mediator is appointed to help the parties come to a resolution or settlement.
6. Trial: If a settlement is not achieved, a trial will ensue which you will need to attend in entirety. Medical malpractice trials can typically take 1-3 weeks. Most trials are scheduled less than 6 months from the time a claim is filed, however some can be scheduled up to years later.
7. Trial Outcomes:
    a. Voluntary dismissal: The trial can be dismissed by the plaintiff's attorney or the court. Depending on the situation and statute of limitations, the claim may be eligible to be refiled within a certain time limit (often up to 1 year).
    b. Settlement: is an agreed upon payment to the plaintiff.
    c. Verdict: is a decision made by the court/jury who would determine the amount of monetary damages.
8. Notifications of Trial Outcomes
    a. The National Practitioner Data Bank (NPDB) is notified of any settlements or losses, the nature of the case, and the amount.
    b. The State Medical Board may also be notified of the settlement or loss. You will not lose your medical license secondary to the trial outcome itself, however the State Medical Board could choose to investigate your medical license in the case of multiple settlements/verdicts that are reported within a certain period of time.

c. Oftentimes you, as the defendant are responsible to make sure that the NPDB and any state medical boards are notified within the certain time frame.

9. Save all records
10. Disclosure of Lawsuits: For future hospital and insurance privilege requests, disclosure of all lawsuits is needed including the outcome (dismissal, settlement or verdict).

Nothing herein is intended to provide legal advice, as malpractice laws vary by jurisdiction. AAST makes no representations regarding compliance with state or federal law, and all readers are encouraged to seek advice of local counsel regarding applicable malpractice laws.

CHAPTER 36:
Renegotiating Contracts: What Do I Need and How Do I Get It?

Christopher A. Butts, PhD, DO, FACOS, FACS
and Kimberly A. Davis, MD, MBA, FACS, FCCM

The first few years as an attending, as challenging as they may have been, are over and you may want to consider renegotiating your contract. Not all contracts need to be renegotiated – if you have the academic and clinical support that you need to be successful, and your compensation appears to align within your organization, you may not need to make a change. The decision to renegotiate a contract requires a combination of self-evaluation and longer-term career planning. It is important to understand your personal goals, and align them with both self-perceived and institutionally perceived value. The goal of this chapter is to provide some insight into these factors to help you achieve optimal success in your renegotiating.

Who do I want to be and how do I get there?

It is important to reflect on your current state and envision a future state that may either be similar or dissimilar to where you are. It is important to reflect on who you want to be in the next three-five years, and what you might need to get there. The first thing you may want to ask yourself when renegotiating a contract is "what is my value to the organization" and "does my current role align well with my future state"? Once you have done your self-assessment, evaluate your current contract and what you would like changed. There is no standard list. Everyone is unique and has different wants/desires/requirements for career advancement. Additionally, there are various types of practice structures (private practice, community hospitals, medical groups, and academia). You may be looking for a change to your compensation (base salary vs. bonus), different benefits, more time with family, a different schedule arrangement, more clinical support (APPs, clinic time, OR time), a chance at academic advancement, increased research resources, or a chance at administrative/leadership responsibilities just to name a few.

What is my "5-year plan"?

You're now at a point in your career where you are no longer a trainee and have a few years of experience under your belt. At this point, you should be resetting your focus. You have spent the last several years with the sole focus on refining your practice. Now your focus should transition to "who do I want to be in the future?" Do you want to be a medical director, a researcher, an educator, program director, or mange a practice? Alternatively, are you content as an outstanding clinical surgeon? While you might not completely know what your long-term goals are, you should begin to figure out where you want to see yourself.

What Can I Negotiate For?

The next step is figuring out what you can negotiate. What type of institution/practice are you at? Often university contracts have less or little "wiggle room" and are heavily standardized. Hospital-based contracts, at times, have many parts and addendums containing more specific areas ripe for renegotiation. Salary, "protected time" (i.e.: FTE reduction), CME funds, vacation time and/or schedule/call adjustment (numbers worked), changes in benefits are all portions of the contract that can be adjusted. If you belong to a private practice or medical group there are other considerations, such as practice partnership agreements, increased block time for elective cases, hospital/ED call coverage, or acquisition/utilization of advanced practitioners to supplement your daily practice. The important thing is determining the environment you practice in and what your institution/practice has allowed others to negotiate. Not all institutions/practices are created equal, so understanding what portions of your contract can be modified will allow you to focus your area of effort productively.

What is My Value?

When looking at this component of the renegotiation process, it is often beneficial to determine *your* value to *your* institution/practice. It's finding that sweet spot between humility and hubris to maximize your bargaining power. Every contract is a give and take relationship. How are you valued by your institution/employer? This requires you to evaluate your clinical and non-clinical value to your employer.

Let's start with the clinical aspect. Probably the easiest metric to evaluate is your clinical productivity in both relation to your institutional peers, regionally, or nationally. Often this involves comparing operative case volume, numbers of patients evaluated, institutional RVU productivity, or billing. Once you have an idea of how you compare within your own institution, you can then evaluate where you stand regionally or nationally with metrics, such as the Medical Group Management Association (MGMA). However, as Acute Care Surgery is dependent on urgent and emergent case volumes, which are often unpredictable, RVU assessment may not be the best metric for the specialty. Many ACS services are focusing more on immediate availability of senior surgical expertise and the ability to provide rescue.

Where does your performance fall when compared to various benchmarks? Going further, what is your skill set in relation to your peers? Do you have a skill set that sets you apart? Do you do complex procedures/operations that aren't offered by others at your institution or practice? Do you have a clinical niche or a referral basis that will be difficult to fill if you were replaced? Remember that to an administrator, all surgeons are the same … you need to be able to articulate your value.

After evaluating your clinical value, now move on to your non-clinical value. What non-clinical benefit do you provide to your institution? Do you hold administrative roles/responsibilities? Do you actively perform research or allot a significant amount of your time to educational interests of students, residents, fellows? Are you involved with outreach or

help with the prehospital aspects of your institution? All these things require time and effort and should be considered in your overall value when negotiating your new contract. As many of these non- clinical responsibilities are requirements for maintaining certification as a trauma center, these hold a strong value as well.

Conclusion

Renegotiation, particularly in the early portion of your career, can be stressful and, at times, daunting. The key is to evaluate your overall value and which areas of your contract appear to be negotiable at your institution. If you get stuck, reach out to a mentor or colleague, who has gone through it. If you get a new contract or addendums to your current contract, always have your contract attorney re-evaluate the new verbiage and conditions. Remember, if you don't win or get what you want, hold your head up. Just because you didn't get everything or anything this contract cycle doesn't mean you won't the next. And be cautious of unreasonable requests or threats to depart if you don't get what you want – it helps no one to burn bridges. The grass is not always greener elsewhere.

CHAPTER 37:
Transitioning Between Jobs

Alexander C. Schwed, MD, FACS and Angela L. Neville, MD, FACS

Thinking About a Change

Jobs in trauma and acute care surgery are difficult. Some would argue all surgical jobs are tough, but ours is a subspecialty significantly over-represented in surveys on burnout and depression among surgeons.[1] Physiologic data about surgeons who take in-house overnight call are also eye-opening with respect to the physical and mental toll that our jobs can take in the name of service to our patients and our hospitals.[2] Decisions regarding changing jobs are difficult for many reasons. These include the stress of relocating one's personal and professional life, the impact a job change may have on current work partners, opportunities that are lost or gained because of a job change, as well as the perception of failure that one may experience leaving a job early in one's career. Our hope is to provide suggestions for things to consider and plan for prior to embarking on the journey of finding another job. It bears repeating that each job change will have its own unique context. You, your partners, your hospital, and your circumstances will all be distinctive, and to a certain extent the advice presented here may or may not apply.

Who are Your Mentors?

As with so much in a surgical career, turning to one's mentors for advice and reality testing can be an essential first step when considering a job change. Many new jobs are difficult in the beginning for a variety of reasons: new city, new hospital, new role, or new expectations. Any combination of these factors may contribute to initial dissatisfaction or perception of poor fit. Finishing training and starting your first job as an attending is, for many, the first time in clinical medicine that you've held the "top job." This adjustment can be particularly challenging when combined with any of the "new" factors identified above. Take time to ease into your role before thinking about a job change and use your mentoring network that you have built up over time to connect or reconnect with trusted advisors. Are your feelings of dissatisfaction ones that will improve with time? Are there changes on the way for your division or department that might address perceived limitations of your current situation? Or, conversely, are you in a situation that you need to leave because your gut and your mentors both tell you it's not a good fit, or things are unlikely to change, or the reasons you took the job in the first place have changed and you find yourself with new goals or ambitions? Recruitment of new faculty is a costly endeavor for most departments and hospitals, with estimates of indirect and direct costs to departments of surgery as high as $400,000 for the loss and replacement of one surgeon.[3] If you feel that your new job fit isn't a good one, and you're relatively certain that this discomfort is not due to adjusting to a new situation, you should begin by having a conversation about these issues with your divisional or departmental leadership. Given that recruiting and hiring a new surgeon is costly, not to mention the effort and time required, it is usually in your

leadership's best interests to work with you to help ameliorate the problem. These conversations should be a jumping off point to work on solutions to problems you're having with your job. If your leadership cannot or will not work with you to address your concerns, that is likely a sign that it is time to start looking for a new opportunity elsewhere.

What if you don't have (or can't fall back on) a mentor?

It is important to recognize that the concept of mentorship may be fraught if you find yourself in a challenging first job. Maybe your primary mentor went out on a limb to get you that position. Maybe your current or future leadership is either in good (or bad) standing with your mentors and you don't feel safe divulging your present conflict. Maybe you are more of an introvert and have never felt comfortable sharing your aspirations or disappointments with others. This can be an isolating and personally challenging time. These feelings can be even more exaggerated because we all felt that once we finished residency and fellowship, we would finally reach the 'promised' land of being the attending. Feeling uncertain or dissatisfied in one's first position can create a significant amount of insecurity or self-doubt, and that can be incredibly difficult to share with even the most trusted mentor.

In these situations, it is reasonable to seek the advice of – complete strangers! Individual counseling to help clarify your personal goals, possibly for the first time in your life, can be life changing. If you don't feel like you have the time or bandwidth to do that, then this may already be telling you something. In our inter-connected world (X, Facebook, etc.), there are innumerable affinity groups (Surgeon Mom Group, Gay Men Physician's Group, Society of Black Academic Surgeons) who can post your situation anonymously to allow others to reach out to you privately. Finally, don't be afraid to connect with the residents and fellows you trained with. These colleagues can serve as Peer Mentors, as they know you very well and may help you clarify your concerns. Above all, realize that you are not alone and that many people do change jobs within the first five years.[4]

What's Pushing You Out? What's Pulling You In?

When it comes to changing jobs, it's important to determine what factors are pulling you towards a new opportunity and what factors are pushing you away. Push/pull factors are a common framework used in corporate culture to frame job change choices, and ones that can certainly apply to medicine. Poor leadership, limited opportunities for advancement, difficulty with scheduling or clinical load are all possible "push" factors that may contribute to thinking about a job change, while factors such as increased compensation, better leadership, more clinical opportunities, or the perception of improved work-life integration may all "pull" a new attending towards a different opportunity. Though there is a lack of granular published data on the factors that motivate Acute Care Surgeons to change jobs, some data exists from our Pediatric Surgery colleagues. In a study of fellowship trained Pediatric Surgeons who left their first job, Crafts et al. describe perceived lack of opportunity for advancement, unfulfilled career goals in current practice, lack of mentorship, excessive case load, and interpersonal conflict all as contributing to the decision to change jobs.[5] Push and pull factors are one way of framing

your job choice, and it can be helpful to present the "case" for and against your contemplated job change. It may sound trite, but often the grass appears greener on the other side. Are the perceptions of new opportunities that are pulling you to a new job accurate? Are the factors pushing you away from your current job truly unfixable? Working with your mentoring network can help reframe your thinking and may show you other ways of considering your current options versus potential future opportunities.

Is Now the Right Time for a Job Change?

There is, perhaps, simultaneously no good time and no bad time to look for a new job. Now that you have completed your training and are an attending, you are free of the academic timelines of your past. You can change jobs whenever it would work best for you (and potentially your partner or family). It's important to look closely at your current employment contract, as often a required period of notice is built into this document. Amount of notice required can range from 30 to 180 days, and it's important to keep this in mind when planning on a job transition. It should also be pointed out that looking for a new job is not the same as intending to leave your current job. There are certainly surgeons who have used the opportunity to examine other offers as a bargaining chip, or to contemplate or negotiate a change in their current working situation. As a young attending, however, it is more likely that if you find yourself in a job that is not working for you, you will be looking to change jobs and not to renegotiate your current position.

Sharing Your Decision

Once you've decided to begin looking for a new job, it's important to plan for how and when you will inform your current leadership and current partners. A lot of this advice depends heavily on the context of your move. If you are in a good job and are happy but have had a change in your personal or family situation that requires a location change, you are in a very different position than the person who is deeply unhappy at work and wants to leave their current gig as fast as humanly possible. The situation you find yourself in will help dictate your approach and content of your conversations.

In general, if you are seriously considering leaving your current job, you should meet with your divisional and/or departmental leadership and inform them of your plans. Some would advocate not sharing your desire to leave until you have a new job offer in hand, but we would advise against this. Though individual circumstances will vary considerably, we would argue that disclosure to leadership is honest and forthright, something you can only hope will be repaid to you in kind. It is unlikely that this news will be met with retaliation or hurt feelings, and it is better to have an honest but difficult discussion about your plans than to have someone discover your intentions prior to you sharing them. The world of surgery is a small one, and it will likely only further complicate your situation being found in a lie by omission.

Telling your current partners of your plans will also highly depend on both your circumstances and your individual relationships with these colleagues. Whether or not you

share with your partners that you are contemplating a job change or are starting to look for a new job, we would argue that once you've decided to leave and have accepted another offer it is always preferable to share this news in person and have it come from you directly, rather than a mass email or awkward announcement by someone else at a meeting. If you can, meeting one-on-one or sharing this news with a small group of colleagues is likely better than standing up at a department-wide faculty meeting. It may be the case that, after the initial blow of surprise washes away, some colleagues may have more questions or want more details than you care to share. Remember that you do not owe anyone more than you're willing to share, and it's likely best to keep your reasons for leaving succinct and honest. It doesn't serve anyone's interest by turning a short one-on-one meeting to share your news into a grievance-filled complaining session. Attempt to take the high road, work to maintain your professional and personal network of colleagues and know that it's likely your paths will cross again. Do your best to keep your bridges intact.

Giving Formal Notice

Once you've been given a formal offer of new employment, you must make sure to give formal notice to the appropriate leadership in your division or department of your intention to resign. These procedures are often spelled out explicitly in your job contract and may also be found on your local Human Resources website. At a minimum it includes a formal written declaration of your planned termination of employment and a proposed end date of employment. This can sometimes be initially handled via an email but should be followed up with a formal signed letter. This is usually addressed to your chair or site director, though the individual instructions may vary with the type of job you have and the current location in which you work. Though it might seem awkward, you can generally call your HR office to make sure you get the process correct. It's important that these notifications be short and direct. This is not the opportunity for feedback or a time to air grievances; a simple statement of your intent to resign your current job, the date that you wrote the letter, and your proposed last day of employment is usually all that is required.

End Dates

Though it is possible that you may be released early from your contract, you should make explicit plans for a proposed end date for your current job. If the terms of your leaving are positive, this is likely a friendly negotiation with your division chief or chair, and you may have already had parts of this discussion if you decided to share your plans with leadership ahead of time; if the circumstances of your leaving are less than positive, it is possible that you may be released earlier than the official period of notice spelled out in your contract. Though we believe this to be rare, you should be prepared for the possibility of having your proposed end date of work be moved sooner, and you may also find yourself in the position of being asked to stay longer than desired. Making plans on the front end for these unlikely scenarios can avoid a lot of stress and heartache but may be unavoidable despite your best efforts. As stated before, trying to take the high road is always the laudable goal. If you've given appropriate notice, you are not obligated to stay beyond that date. Should you be asked, only

you can know what's right for you and your situation. If you find yourself unexpectedly released early, know that the official letter of your resignation allows your employer to end your employment as soon as they wish. If you've been deliberate in your job search and planning for your departure, hopefully this (unlikely) scenario can be dealt with if it arises.

Life in Limbo

After you've accepted your new job and told your colleagues, you may find yourself in a strange sort of limbo. In some jobs, you will have to give notice months ahead of time and will continue to work in an environment where your plans of departure are widely known. This can create some strange situations (seeing your partners begin to interview your replacement, for example), and can also create some challenges surrounding transitions of responsibility and leadership. Given how metaphorically small the world is, especially in Trauma and Acute Care Surgery, striving to be positive and collaborative during these circumstances is in your best long-term interest. Help your current partners and leadership with transitions of title or responsibility, use the knowledge of your leaving to refer new opportunities to other partners, and work with your group to anticipate your departure.

Exit Interviews

Depending on your circumstances of leaving, you may be asked to participate in one or a few exit interviews with leadership. While these can be uncomfortable, we would encourage you to participate meaningfully and honestly in this process with the goal of sharing specific, actionable feedback, if that feels acceptable and appropriate to you. You don't necessarily owe anyone your reasons for leaving, and should you wish, you can chalk up your decision to personal circumstance. Remember that you may need professional letters of references from these former colleagues, and it serves no one to take this as an opportunity to badmouth your work, co-workers, or leadership. Being honest and thoughtful in answering questions about your decision may help ameliorate the problems you encountered that contributed to this decision. Only you can truly know how best to handle these conversations, but we believe that there is a time and place for honest, constructive feedback. Especially if framed with an eye towards process improvement, these interviews may help you leave on a positive note, while supporting your former partners and institution.

You're Never Truly Gone

Once you've left your former job, it's important to understand that your obligations to your former partners and leadership are not necessarily completely done. You may need professional letters of reference from your former division chief or chair, or you may choose to have a former partner serve as a reference for credentialing or subsequent job applications or other professional opportunities. Likewise, you may be asked to serve as a reference for former partners for promotion or additional credentialing. There are also sometimes issues related to liability insurance or periods of non-compete that may require ongoing correspondence with your former employer. If the circumstances of your job change were unpleasant, or you left

your former job due to interpersonal issues, it is possible that short-term interactions may be challenging and best avoided. Longer-term, we can only hope that time and space will allow you to attempt to mend fences. You can never tell where you or former coworkers may find yourselves in the future, so to whatever ability you can it likely helps you to remain civil and collegial throughout what can be, at times, a painful or awkward experience.

Final Words of Advice

Changing jobs can be challenging for many reasons. Use the advice of trusted mentors and your support system. Look forward to new opportunities rather than mourning what could have been. When in doubt, extend grace to those around you, including yourself. Try to give everyone the benefit of the doubt and know that you will meet former partners again in new circumstances. The world is small, and our jobs are tough enough as it is. Changing jobs can be wonderful, and stressful, and overwhelming, but often is needed for a variety of reasons and, if approached with deliberate thought and action, can be a new and better opportunity for personal and professional growth.

References

1. Balch CM, Shanafelt TD, Sloan JA, Satele DV, Freischlag JA. Distress and career satisfaction among 14 surgical specialties, comparing academic and private practice settings. *Ann Surg*. 2011;254(4):558-568. doi:10.1097/SLA.0b013e318230097e
2. Coleman JJ, Robinson CK, von Hippel W, et al. What Happens on Call Doesn't Stay on Call. The Effects of In-house Call on Acute Care Surgeons' Sleep and Burnout: Results of the Surgeon Performance (SuPer) Trial. *Ann Surg*. 2023;278(4):497-505. doi:10.1097/SLA.0000000000005971
3. Schloss EP, Flanagan DM, Culler CL, Wright AL. Some hidden costs of faculty turnover in clinical departments in one academic medical center. *Acad Med J Assoc Am Med Coll*. 2009;84(1):32-36. doi:10.1097/ACM.0b013e3181906dff
4. Stolarski A, He K, Sell N, et al. Mentoring experience of new surgeons during their transition to independent practice: A nationwide survey. *Surgery*. 2021;169(6):1354-1360. doi:10.1016/j.surg.2020.11.044
5. Crafts TD, Bell TM, Srisuwananukorn A, Applebaum H, Markel TA. Accounting for early job turnover in recent pediatric surgery fellowship graduates: An American Pediatric Surgical Association Membership and Credentials Committee study. *J Pediatr Surg*. 2018;53(11):2273-2278. doi:10.1016/j.jpedsurg.2018.04.028

SECTION IX:
Getting a Life

Section Editor: Christina Colosimo, DO, MS

CHAPTER 38:
Financial Planning

Bo Zhang, MD and C. Caleb Butts, MD, FACS

Background: You did it! You got that first ATTENDING paycheck! After years of borrowing or making just enough to make ends meet, you are greeted with the exciting new challenge of what do with a suddenly much higher salary. For possibly the first time in your life, you must consider how to best utilize your new income to provide for you and your family's living expenses, pay down debts, and save for retirement.

For many young faculty, it is very surprising to realize that their new income is not limitless. In fact, many find that they continue to have financial stress despite the new income—and this both increases their job dissatisfaction and risk of burnout. By taking assessment of your goals and options, you can plan your monthly spending to allow you to live the life you want, pay down debt, and build future wealth.

Goals:

- Decide if you need a personal financial planner
- Play good defense: Purchase necessary insurance (i.e. disability, life, umbrella)
- Make a student loan repayment plan
- Take advantage of tax-advantaged retirement savings

Goal Breakdown:

Consider if you need a personal financial planner – For many young faculty, putting together a comprehensive personal financial plan can seem daunting. There are a lot of different areas to pay attention to (insurance, investing, paying down debt), and many different caveats to your particular situation that prevents one-size-fits-all advice. For many, they don't even know what they don't know. While there are ample resources available to develop a plan individually, using a personal financial planner may be helpful. Here are a few things to consider.

- "Fiduciary" – A fiduciary responsibility dictates that the planner has a duty to provide advice with honesty and integrity—with your best interests in mind. Not all planners are upheld to fiduciary responsibility
- Price – Some planners charge you a one-time fee for to develop a plan and then you execute it. Others may charge a fixed annual fee, regardless of how often you use the service. There are even options to charge you an hourly fee, like an attorney. It is important be on the lookout for those that charge you an "assets under management" (AUM) fee. This typically approaches 1% per year. While this may not be much with a $50,000 portfolio, a $1 million portfolio can be nearly $1000/month.
- Familiarity with physician finances – Given the highly specific and similar issues faced by physicians in terms of debt and income, using a planner that regularly provides advice to physicians can save a lot of second-guessing and missed opportunities.

Play good defense – For the first time in your career, you have both something to protect (your wealth and income) and the money to protect it. Consider your need for the following products:

- Disability Insurance – It is important to select individual own-occupation, specialty-specific insurance that is portable from job-to-job. Typically, these will allow you to purchase up to $15,000 insurance should you become disabled that prevents you from doing your current job (i.e. surgical critical care physician). You may be able to purchase these through your training program as part of their Guaranteed Standard Issue (GSI) plan through one of the following companies: Ameritas, Guardian/Berkshire, MassMutual, Principal, or Standard. Typically, this costs about $500/month, but varies depending on age of purchase, gender, and degree of coverage. It is important to obtain specialty specific coverage, as it will allow you to receive disability payment while still working in the medical field (if desired). As it was purchased post-tax, any benefits utilized would be tax-free.
- Life Insurance – If something were to happen to you, what would happen to those that depended on your salary? It is important to plan for death by purchasing a life insurance product. For most people, it is recommended to buy term life insurance for 10-25x your annual expenses. While this amount can be shockingly high, this will allow your family to replace your income indefinitely. For a young faculty member making $250-300k, a $5 million dollar 25-year term life policy can be as cheap as $200/month.
- Umbrella Insurance – Umbrella insurance provides additional coverage in the event of any liability unrelated to work, i.e. an auto accident or accident on your property. For example, should someone claim disability after a car accident that was above the maximum benefits by your auto insurance, your umbrella policy would take effect. A $2 million umbrella policy may cost as little as $300/year.

Make a student loan repayment plan – There are many different types of student loans that dictate student loan repayment options. In general, you should become acquainted with these types of loans, options for repayment, and develop a plan that works for you. There are many services that will assess your student loans and provide you options for repayment.

Take advantage of tax-advantaged retirement savings – Your job may offer one or more retirement savings options. These can include participation in a "defined benefit plan", such as a traditional state retirement plan, as well "defined contribution plan", such as individual retirement plans (i.e. 401k, 403b, 401a plans) or deferred compensation plans (457 plan). These may even come with contributions from your employer. For most young attendings, these plans are optimal in that they provide tax-free contributions, tax-free growth, but taxable distributions. In general, take advantage of those that both provide matching contributions first before those that do not offer matching contributions. A brief discussion of the types of accounts are below:

- 401k plans – A ***voluntary*** individual retirement account typically provided by *private corporations*. These allow for pre-tax contributions that reduce your taxable income and grow tax-free, though taxes are due at the time of withdrawal.

- 403b plans – Similar to 401k plans (***voluntary*** individual contributions), only they are typically provided *by non-profit, tax-exempt, or state-run organizations*. These also allow for pre-tax contributions that reduce your taxable income and grow tax-free, though taxes are due at the time of withdrawal.
- 401a plans – These are less frequently used, but they are individual retirement plans that have ***mandatory*** contributions that allow for pre-tax contributions that reduce your taxable income.
- 457 plans – These are deferred compensation plans that allow an employee to defer some of their compensation (subject to the same annual limits as a 401k or 403b), reducing taxable income. These contributions can be withdrawn prior to age 59.5 without an early withdrawal penalty. There are some special circumstances regarding 457 plans (i.e. governmental vs. non-governmental) that require additional thoughtful planning for your particular situation.
- Roth designation – Any of the above accounts may offer Roth-designated contributions. Roth-designated contributions are taxable, but grow tax-free and are tax-free on withdrawal. For most young faculty, these are not recommended (as your tax rate now is likely higher than it will be in retirement), but there are special situations where these can offer additional benefits.

Additional helpful tips:

- Now that you have entered a new income bracket, you may receive many solicitations from investors, hedge funds, or other financial companies. Some can be quite persistent. Do not feel pressured to buy something you don't fully understand or fully need. Set aside time to think about what your financial goal is and choose the type of assistance that will make the most out of your income and investments.
- Your new income also puts you in a new tax bracket. It may now be helpful (and timesaving) to find a local certified personal accountant (CPA), who not only can help file taxes but also liaison with the IRS on your behalf. Ask for a fiduciary. Fees are typically about $500.
- Disability insurance can be offered by many different sources – some of them may even be sponsored by a medical organization (for example, the AMA). This does not mean the offered insurance is necessarily better, or even guaranteed to be consistent year to year. Some may have a long "wait" period before kicking in, during which no other income can be generated. Read through the insurance coverage carefully. You may go through a private broker who can assist with getting you the best coverage for your specific circumstance.

Helpful Resources

Books

- If You Can: How Millennials Can Get Rich Slowly by William Bernstein
- The Bogleheads' Guide to Investing by Mel Lindauer, Taylor Larimore, Michael LeBoeuf
- The Physician Philosopher's Guide to Personal Finance by James D. Turner
- The White Coat Investor by James M. Dahle

- The Psychology of Money by Morgan Housel

Blogs

- WhiteCoatInvestor.com
- Bogleheads.com

CHAPTER 39:
Housing

Thomas S. Easterday, MD and Andrew J. Kerwin, MD, FACS, DABS

5-Year Goals:

1. Live like a resident for the first couple of years
2. Have an initial housing plan without a large mortgage
3. Save for an "attending" home

Background:

You just finished residency/fellowship training and you finally have the salary of an attending. Congratulations, but do not grow into your income too fast! You have already been living off a resident salary for the last several years. If you continue during your first few years as an attending, you will be better off in the long run! Instead, you should focus on paying off high interest loans/credit cards, saving for retirement, and saving for a down payment on a future attending house. The worst thing you can do is be that physician who is finishing training and is maxing out credit cards or taking out expensive car loans/large mortgages with that new attending paycheck.

Initial Housing Plan:

When considering housing as a new attending, you will hear a lot of varying opinions about renting versus buying. You will ultimately need to discern what is best for you/your family but there are things to take into consideration: mortgage amount (refer to living like a resident above), schools for children, safety, and nearby amenities. The question comes down to: do I buy a house or do I rent?

One plan would be to consider renting for a few years. This may especially be a good idea if you are moving to a new city or joining a new practice. By renting for 1-2 years you can make sure your job, partners, and the city are a good fit for you (and your family). It will also allow you to boost your wealth by paying off loans/debt, saving for retirement, and saving up for a down payment on a home. Additionally, if you are in a new city, it allows you to assess important housing factors such as safety, school districts, and the proximity of things you enjoy (parks, concert halls, restaurants, etc).

If you are going to purchase a home, I would strongly recommend a "starter home" vs an "attending home". This will allow you to focus on securing your financial future (rather than a significant portion of your income going to a large mortgage) by paying off high interest loans and saving for retirement while additionally saving for a down payment on that future "attending home".

Physician vs Conventional Loan

A physician just out of training may benefit from a physician loan so they can use their income for other things (high interest loans, catching up on retirement savings etc). The

physician loan has pros and cons: they don't have private mortgage insurance (PMI), which is great, but come with the potential for higher fees and interest rates!
Make sure to pay close attention to the interest rates when comparing! When I bought my "starter house" as a fellow, I used the equity from the sale of my residency house as part of my down payment. However, I didn't have 20% so I was subject to the PMI. I chose to do a conventional loan and suffer with PMI because the interest rates were so much lower and I knew that I would be able to remove the PMI quickly (see below).

Removing PMI

Private mortgage insurance (PMI) is an insurance premium that you must pay if you are unable to put 20% down on your home. This is a security for the bank/lender, should you default on your loan. If you do have PMI on your home, you will want to get rid of it as soon as possible; it is money that you are throwing away!

To rid yourself of this insurance cost you need to get your loan-to-value (LTV) ratio to 80% or less. This can be done in one of two ways (or a combination of both). The first is to pay more towards your principle to reduce the loan amount. The second is to get your home reappraised to see if the value of your home has increased enough. Getting a home reappraisal is typically done through the bank/lender who has your mortgage. You will need to pay for the appraisal to occur.

Purchasing an Attending Home:

By the time you are several years out from training, you should have made a dent in your debt, started on a nest egg, and have saved up some money for a down payment on that dream home you've always wanted.

If you have a starter home you can consider selling (and using the equity for a down payment) or you can refinance to obtain equity and then turn it into an investment property. When you are at this stage, avoid physician loans (unless they have better interest rates/fees)! If you are unable to put down the 20%, you can't afford the house!

Strongly consider a mortgage no more than twice your family's gross income and spending less than 20% of your family's gross income on housing (including taxes, utilities, etc). Remember, just because your bank/lender says you can afford a larger amount of debt doesn't mean you should – it will impact your ability to save for the future.

Keep in mind that location is very important when choosing a house. While your pay in some locations may be slightly higher, you will find that the cost of living is astronomically more. You may find a dream home in the Midwest for 800k with the same type of home in large coastal cities that could be multiple millions. While you can afford more than twice your gross income on housing, just keep in mind that it will impact other aspects of your financial portfolio.

Much like growing into your attending income, be sure to grow into your attending home. Don't finance furniture/upgrades as soon as you move in. Rather, save and buy them over time. Always pay cash unless you get a 0% APR (and don't forget to pay it off before interest accrues)!

Helpful Resources:
The white coat investor has a lot of good information (book/website/blog) for physicians including housing! https://www.whitecoatinvestor.com/personal-finance-for-doctors/

CHAPTER 40:
Fertility and Family Planning

Megan E. Lundy, MD and Chrissy Guidry, DO, FACS

Background: Training is getting longer and the median age of matriculation into medical school is now 24 years. This means that the median trainee will complete residency between the ages of 31 and 35 years depending on their specialty. This does not take into account fellowship, which adds another 1 to 3 years per subspecialty. As a result, individuals who want to have children face difficult family planning decisions and frequently do not experience institutional support. Unfortunately, the impact of these choices disproportionally impacts women as their fertility declines much more sharply than men's. One in 10 women in the general population will deal with infertility. A staggering one in four in female physicians and one in three female surgeons will experience infertility.

Here are some things you should consider if starting or growing your family is something important to you.

5-Year Goals:

- Optimize your physical health to have children- try to see a primary care physician and/or gynecologist annually
- Define your priorities in family building
- Map out where you need to be geographically for the support of growing your family
- Map out funds for what it takes to grow a family and including childcare and schools
- Build networks of support locally, regionally, and nationally to share in building and growing your family

Goal Breakdown:

Optimize your physical and mental health

- While this is easier said than done in the busy world of residency, try to see a PCP/Gynecologist annually.
- Stress is associated with pregnancy loss. While much of this is unavoidable in our line of work, consider opportunities for therapy
- Consider a consultation with a fertility specialist early - their insight is often a helpful adjunct to your primary care physician and will potentially alert you to early fertility issues
    - Women: This will likely involve evaluation of your ovarian reserve- AMH (Anti-Mullerian Hormone) and AFC (Antral Follicle Count)
    - Men: This will involve evaluation of sperm count and motility
    - Consider familial genetic disorders and ask about options for testing
- If you have a partner, ensure they are evaluated as well

- Diet has been shown to impact the quality of your gametes (especially if the quantity is low). Consider adjusting to eat a well-balanced diet and doing your best to avoid those on-call extra snacks (unfortunately they do count)
- Join physician social networks for support and information on fertility and family planning
- Seek 2nd and 3rd opinion or change doctors if your fertility specialist doesn't seem like a good fit for you and your partner

Define your priorities in family building

- Define your family goals: One or multiple children
- Get on the same page as your partner regarding goals
- Single? Want to raise kids as a single parent?
- Filter and eliminate obligations at work to carve out time and energy for family building

Map out where you need to be geographically for the support of growing your family

- Determine your support system (parents, in-laws, friends, and/or nanny) that live nearby
    - If limited support nearby, consider career moves that optimize this support system
- Consider financial feasibility of in-home childcare (i.e. nanny)
    - Ask your colleagues that already have children
- Build a network of similar-minded friends and colleagues (join physician Facebook groups) with kids that you can ask for help and guidance

Map out funds for fertility and subsequent childcare

- Ask your institution what is allowed for fertility coverage before taking a job even if this does not currently apply to you
- If fertility treatments are required:
    - Make sure you understand what your insurance covers
    - Make sure you ask to speak with the financial department associated with your specialist. They can help identify unanticipated costs
- Understand your institutions' parental leave
- Intentionally set aside funds in your current income for raising a child
- Estimate the costs of daycare, nanny, and schools (private vs public) that will be needed in the current region you live in
- Consult with your financial advisor to set up accounts for your children when they are born

Build networks of support locally, regionally, and nationally to share in building and growing your family

- Search out ways to connect with other physicians who are or have experienced fertility issues, family planning, raising children in healthcare

- Create panels or town halls at national meetings to bring people together to discuss and support each other in family planning
- Work with the Women in Surgery organization at your hospital and see if the medical students and/or trainees have an interest in a panel session to discuss their options in family planning
- Tell your story, it is healing

Helpful resources:

- Resolve information about insurance coverage: https://resolve.org/learn/financial-resources-for-family-building/insurance-coverage/insurance-coverage-by-state/
- Resolve.org for information to help you understand infertility more: https://resolve.org
- Tedx talk to share with trainees about getting prepared: https://www.ted.com/talks/dr_chrissy_guidry_family_planning_in_medicine?utm_campaign=tedspread&utm_medium=referral&utm_source=tedcomshare
- Costs summarized: https://www.forbes.com/health/womens-health/how-much-does-ivf-cost/

CHAPTER 41:
Health and Wellness

Alexis Hess, MD and Jennifer L. Hartwell, MD, FACS

Background: We have devoted so much of ourselves to training for our careers and to care for our patients. It is essential that we also care for ourselves so we can be at our best for our patients at work and our friends and family outside of work. We need to devote ourselves to the people we care for and to the things that bring us joy.

5-Year Goals:

- Determine your priorities outside of work: spiritual life, family, friendships, community, hobbies, and physical and mental health.
- Renew your interests in the things that bring you joy. Make time for them.
- Structure your work life to accommodate your family, friends, and hobbies. Ask for what you need.
- Encourage and support your partners to also take care of themselves.

Goal Breakdown:

Determine your priorities outside of work: spiritual life, family, friendships, community, hobbies, physical and mental health.

- Be thoughtful about what is important to you and what you want to prioritize. You are no longer a trainee. This is what your life is going to look like for the rest of your career.
- Renew your spiritual life if this is important to you with reading, prayer, meditation, etc.
- Prioritize family events and engagements. You may not be able to attend every event, so decide ahead of time which ones are the most important to you.
- Be present for your family as much as you can. You are replaceable at work. You are not replaceable to your family.
- Stay involved in your community. Find places to volunteer your time and talents outside of work. Research indicates that volunteering is good not only for others, but also for our own emotional health.
- Be deliberate about your physical health. Schedule time for exercise as you do for a meeting. Block your calendar.
- Schedule preventative health appointments (dentist, optometrist, mammogram, colonoscopy, annual physical, etc.) and offer to cover for your partners to do the same.
- Utilize your employer's or other resources to support your mental health. Seek therapy when you feel you need it.

Renew your interests in the things that bring you joy.

- Re-engage with things you used to do for fun before surgical training or explore some new hobbies. Find ways to decompress after work.

- Set goals to spend time doing the things that you love every week or every month and make this a priority.
- Determine the outside of work activities that are important to you and non-negotiable, and make time to do them, recognizing that it will be necessary to prioritize these events to fit around your work schedule.

Structure your work life to accommodate your family, friends, and hobbies. Ask for what you need.

- Don't be afraid to ask for what you want because you are a junior attending. Treat yourself as an equal to your partners.
- Ask for help when you need to be there for family or friends or go to events that are important to you.
- Request time to attend CME events and develop relationships beyond your local workplace.
- Research suggests that protecting 20% of your work time to work on your "passion work" (education, research, mentoring, special projects, etc) is protective for burnout. Work with your leadership to design your schedule to allow time for "passion work", even if it's not protected FTE time in your contract. Get creative.
- Request off all the vacation time you are allotted. Always be planning your next vacation.

Encourage and support your partners to also take care of themselves.

- Be there for your partners when they ask for help. Pay it forward.
- Learn what is important to them and when they might need coverage to be at family events or be present for friends or community events that they value.
- Volunteer to help them when you can to create an environment that supports having a life outside of work.
- Debrief stressful incidents from work with your partners, family, friends, or a therapist. Our work takes its toll on us.
- This is a difficult career, and it is better when we can work as a team to support one another in our lives.

Resources:

There is no book or journal article that can tell you what you value and what is important to you in your life. Reflect on what you love and what comes first. Talk to the people who love you. Be purposeful in building the life you want. Our societies have an increasing interest in helping us, too. A few places to look to get your mind thinking in the direction of personal health and wellness:

AMA Steps Forward: https://edhub.ama-assn.org/steps-forward or https://www.ama-assn.org/practice-management/physician-health

American College of Surgeons: https://www.facs.org/for-medical-professionals/professional-growth-and-wellness/surgeon-wellbeing/

CHAPTER 42: International Medical Graduate Challenges

Devin O'Conner, MD and Hassan Mashbari, MD, DABS

5-Year Goals:

- Secure an immigration visa
- Achieve financial stability
- Adapt to the US healthcare system
- Maintain appropriate licensure

Background:

International Medical Graduates (IMGs) are those who earned their medical degrees outside of the US and Canada. They encounter unique challenges such as cultural and visa issues, financial adjustments, and the need to retrain in the US healthcare system. Benefits include job security and satisfaction, while drawbacks include lengthy training, restarting a career, and the increased stress and workload which comes along with restarting.

Visa Options:

- H-1B: Professional employment visa valid for up to six years, requiring sponsorship by a not-for-profit or university for 'cap-exempt' status.
- J-1: Exchange visitor visa for residency/fellowship clinical training programs, sponsored by ECFMG or universities for research positions, renewable annually.
- O-1A: For IMGs with extraordinary abilities in science, less common, not tied to USMLE completion.
- TN: For Canadian and Mexican citizens under NAFTA for professional employment (non-clinical physician teachers and researchers).
- Green Card: For permanent residency, leading to potential citizenship after 3-5 years, available through family, employment sponsorship, or visa lottery.

The American Medical Association has information regarding how to obtain training and more durable visas for work in the United States. There are many private companies who will assist with navigating the immigration system for a fee. Often, institutions will have an office that manages visa applications and maintenance.

Adaptation to the US:

Training to be a medical physician comes with its own stressors and difficulties, but being an IMG adds an additional level of complexity. Making the transition to functioning in the American medical system requires patience and a willingness to adapt to an often-unforgiving system.

Cultural Changes

IMGs meet several challenges that might prevent a smooth transition to a US career such as linguistic and cultural barriers, lack of consideration for one's ethnic background, adaptation to settings with different epidemiology and technology tools, and simultaneously the need to grasp new clinical skills and knowledge. Navigating cultural differences is the most reported IMG challenge related to the US GME and healthcare system transition, registered in up to 17% of residents[3]. Many residency programs will have support groups for IMGs, but these are often institution specific and not well-established. The ability to adapt and be willing to challenge one's notions regarding medical treatment must be paramount.

Financial Awareness and Wellness

As academic medicine is funded differently, it is crucial to learn the nuances of funding and benefits. This knowledge also helps with a plan for a work-life balance and wellness for IMG physicians. The American Medical Association provides resources to assist early-career physicians with discovering funding opportunities.

Wellness in itself is a complex topic, but it remains important for IMGs to maintain relationships with their families who are often across the globe. Developing strong community ties both within the training programs and in the physical locations in which IMGs find themselves is important. Being apart from family, friends, and a community is something that IMGs must deal with daily. Building local support systems and having the support of supervisors and peers is vital.

Racism and Inherent Bias

An article published in 1994 shed light on the extent of racial discrimination suffered by IMGs in training facilities; up to 23% of participants reported at least one experience of ethnic harassment from patients, attending faculty, peer residents, and nurses. The frequency of self-reported racial incidents was higher in every minority group compared to the white population; racial slurs were the most common form of racial discrimination, followed by favoritism and malicious gossip.[4] There is overwhelming evidence that IMGs who train in America with the same board examinations are perceived as inferior in medical training and ability – this is referred to as a 'medical inferiority bias'.[6] Understanding the inherent bias is an imperative for coping, but it remains demoralizing.

Licensing

State licensure requirements are designed to verify that IMGs meet the same requirements to obtain a medical license as graduates of accredited U.S. and Canadian medical schools. All state licensing jurisdictions require a graduate of a foreign medical school to complete at least one year of accredited U.S. or Canadian graduate medical education before licensure. However, 12 states require two years and 25 states require three years of accredited graduate medical education, so it is important for IMGs to verify licensure requirements for each state.

Many hospitals, managed care organizations, licensing boards, and other institutions may require that IMGs provide verification of credentials directly from their medical school, even

though most international medical graduates have their credentials evaluated by the Educational Commission for Foreign Medical Graduates.

Leadership opportunities:

- AMA IMGS Governing Council: International Medical Graduates Section (IMGS) leadership opportunities | American Medical Association (ama-assn.org)
- Department/Hospital Leadership positions
- ACS International Fellows International Fellows | ACS (facs.org)

Helpful Resources/Citations:

1. International Medical Graduates (IMG) toolkit: Introduction International Medical Graduates (IMG) toolkit: Introduction | American Medical Association (ama-assn.org)
2. STATE SPECIFIC REQUIREMENTS FOR INITIAL MEDICAL LICENSURE FSMB | State Specific Requirements for Initial Medical Licensure
3. International medical graduate resident wellness: examining qualitative data from J-1 visa physician recipients. Symes HA, Boulet J, Yaghmour NA, Wallowicz T, McKinley DW. *Acad Med.* 2022;97:420–425.
4. Racial and ethnic discrimination during residency: results of a national survey. Baldwin DC Jr, Daugherty SR, Rowley BD. *Acad Med.* 1994;69:19–21.
5. Murillo Zepeda C, Alcalá Aguirre FO, Luna Landa EM, Reyes Güereque EN, Rodríguez García GP, Diaz Montoya LS. Challenges for International Medical Graduates in the US Graduate Medical Education and Health Care System Environment: A Narrative Review. Cureus. 2022 Jul 27;14(7):e27351. doi: 10.7759/cureus.27351. PMID: 35910699; PMCID: PMC9334519.
6. Normalized "medical inferiority bias" and cultural racism against international. Medical graduate physicians in academic medicine. Smith SS, Parkash V. *Academic Pathology*. 2023;10/4.