

**THE  
AMERICAN BOARD  
OF  
THORACIC SURGERY**

BOOKLET OF INFORMATION

JANUARY 2017

Office of the Board  
633 North St. Clair Street, Suite 2320  
Chicago, Illinois 60611

**THE  
AMERICAN BOARD  
OF  
THORACIC SURGERY**

BOOKLET OF INFORMATION

JANUARY 2017

Office of the Board  
633 North St. Clair Street, Suite 2320  
Chicago, IL 60611  
(312) 202-5900  
info@abts.org

**THE AMERICAN BOARD OF THORACIC SURGERY**  
INCORPORATED 1950

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John C. Jones, M.D.*	1957-1959
O. Theron Clagett, M.D.*	1959-1961
Herbert C. Maier, M.D.*	1961-1963
John W. Strieder, M.D.*	1963-1965
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C. Frederick Kittle, M.D.	1973-1975
Paul C. Adkins, M.D.*	1975-1977
Thomas B. Ferguson, M.D.*	1977-1979
Robert G. Ellison, M.D.*	1979-1981
Benson B. Roe, M.D.*	1981-1983
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Richard J. Cleveland, M.D.*	1987-1989
Harvey W. Bender, Jr., M.D.	1989-1991
Benson R. Wilcox, M.D.*	1991-1993
John Ochsner, M.D.	1993-1995
William A. Gay, Jr., M.D.	1995-1997
Marvin Pomerantz, M.D.	1997-1999
Fred A. Crawford, Jr., M.D.	1999-2001
Peter C. Pairolero, M.D.	2001-2003
Timothy J. Gardner, M.D.	2003-2005
Carolyn E. Reed, M.D.*	2005-2007
Richard H. Feins, M.D.	2007-2009
Valerie W. Rusch, M.D.	2009-2011
John H. Calhoon, M.D.	2011-2013
Richard J. Shemin, M.D.	2013-2015

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William E. Adams, M.D.*	1954-1955
John C. Jones, M.D.*	1955-1957
O. Theron Clagett, M.D.*	1957-1959
Herbert C. Maier, M.D.*	1959-1961
John W. Strieder, M.D.*	1961-1963
Rollin A. Daniel, Jr., M.D.*	1963-1965
Edward J. Beattie, Jr., M.D.*	1965-1967
David J. Dugan, M.D.*	1967-1969
Donald L. Paulson, M.D.*	1969-1971
Herbert Sloan, M.D.*	1971-1973
C. Frederick Kittle, M.D.	1973-1973
Paul C. Adkins, M.D.*	1973-1975
Thomas B. Ferguson, M.D.*	1975-1977
Robert G. Ellison, M.D.*	1977-1979
Benson B. Roe, M.D.*	1979-1981

Donald G. Mulder, M.D.	1981-1983
Hassan Najafi, M.D.	1983-1985
Richard J. Cleveland, M.D. *	1985-1987
Paul A. Ebert, M.D.*	1987-1989
Benson R. Wilcox, M.D.*	1989-1991
John Ochsner, M.D.	1991-1993
William A. Gay, Jr., M.D.	1993-1995
Marvin Pomerantz, M.D.	1995-1997
Fred A. Crawford, Jr., M.D.	1997-1999
Peter C. Pairolo, M.D.	1999-2001
Timothy J. Gardner, M.D.	2001-2003
Carolyn E. Reed, M.D.*	2003-2005
Richard H. Feins, M.D.	2005-2007
Valerie W. Rusch, M.D.	2007-2009
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Rollin A. Daniel, Jr., M.D.*	1968-1973
Herbert Sloan, M.D.*	1973-1986
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Brian B. Blades, M.D.*	1948-1953
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Emile Holman, M.D.*	1948-1952
George H. Humphreys, M.D.*	1948-1954
Richard H. Sweet, M.D.*	1948-1955
Julian Johnson, M.D.*	1952-1957
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Paul C. Samson, M.D.*	1953-1958

John C. Jones, M.D.*	1952-1959
Robert H. Wylie, M.D.*	1954-1959
Edward M. Kent, M.D.*	1955-1960
Hiram T. Langston, M.D.*	1955-1960
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William M. Tuttle, M.D.*	1948-1962
Herbert C. Maier, M.D.*	1955-1963
Robert R. Shaw, M.D.*	1957-1963
Anthony R. Curreri, M.D.*	1958-1964
Henry T. Bahnson, M.D.*	1959-1965
Lyman A. Brewer, III, M.D.*	1959-1965
John W. Strieder, M.D.*	1957-1965
Paul W. Sanger, M.D.*	1960-1966
Rollin A. Daniel, Jr., M.D.*	1958-1967
Francis X. Byron, M.D.*	1966-1968
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Donald B. Effler, M.D.*	1963-1969
Denton A. Cooley, M.D.	1965-1971
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Johann L. Ehrenhaft, M.D.*	1966-1972
Herbert Sloan, M.D.*	1966-1973
Donald L. Paulson, M.D.*	1964-1973
Ralph D. Alley, M.D.*	1969-1975
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Myron W. Wheat, Jr., M.D.*	1969-1975
F. Henry Ellis, Jr., M.D.*	1969-1976
James R. Malm, M.D.	1969-1976
Paul C. Adkins, M.D.*	1968-1977
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Philip E. Bernatz, M.D.*	1977-1983
Benson B. Roe, M.D.*	1971-1983
Frank C. Spencer, M.D.	1976-1983
Hermes C. Grillo, M.D.*	1978-1984
Quentin R. Stiles, M.D.	1978-1984
Harold V. Liddle, M.D.*	1979-1985
Donald G. Mulder, M.D.	1975-1985
Charles R. Hatcher, Jr., M.D.	1979-1986
Herbert Sloan, M.D.*	1966-1986
Hassan Najafi, M.D.	1977-1987
H. Edward Garrett, M.D.*	1986-1987
John R. Benfield, M.D.	1982-1988
Richard M. Peters, M.D.*	1981-1988
W. Gerald Rainer, M.D.	1982-1988

W. Spencer Payne, M.D.*	1984-1988
Paul A. Ebert, M.D.*	1982-1989
Richard J. Cleveland, M.D. *	1979-1989
W. Gerald Austen, M.D.	1984-1990
Harvey W. Bender, Jr., M.D.	1983-1991
James A. DeWeese, M.D.*	1987-1991
George J. Magovern, M.D.*	1984-1991
Martin F. McKneally, M.D.	1985-1991
Andrew S. Wechsler, M.D.	1987-1993
Benson R. Wilcox, M.D.*	1983-1993
L. Penfield Faber, M.D.	1986-1994
John Ochsner, M.D.	1986-1995
Mark B. Orringer, M.D.	1988-1995
John A. Waldhausen, M.D.*	1989-1995
Nicholas T. Kouchoukos, M.D.	1989-1996
Mortimer J. Buckley, M.D.*	1990-1996
Alden H. Harken, M.D.	1991-1996
William A. Gay, Jr., M.D.	1988-1997
James L. Cox, M.D.	1992-1998
Joseph I. Miller, Jr., M.D.	1991-1998
Gordon F. Murray, M.D.	1988-1998
J. Kent Trinkle, M.D.*	1992-1998
Marvin Pomerantz, M.D.	1989-1999
Floyd D. Loop, M.D.*	1993-1999
Richard P. Anderson, M.D.*	1991-2001
Fred A. Crawford, Jr., M.D.	1991-2001
David E. Hutchison, M.D.	1996-2001
William A. Baumgartner, M.D.	1996-2002
Peter C. Pairolero, M.D.	1993-2003
David B. Campbell, M.D.	1996-2004
Douglas J. Mathisen, M.D.	1995-2004
Keith S. Naunheim, M.D.	1998-2004
Gordon N. Olinger, M.D.	1994-2004
Victor F. Trastek, M.D.	1998-2004
Delos M. Cosgrove, III, M.D.	1999-2005
Timothy J. Gardner, M.D.	1995-2005
Irving L. Kron, M.D.	1998-2005
Carolyn E. Reed, M.D.*	1997-2007
Lawrence H. Cohn, M.D.*	1998-2007
Larry R. Kaiser, M.D.	2001-2007
William C. Nugent, M.D.	2001-2007
Timothy C. Flynn, M.D.	2001-2008
Richard H. Feins, M.D.	1999-2009
David A. Fullerton, M.D.	2004-2010
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Bruce W. Lytle, M.D.	2005-2011
Valerie W. Rusch, M.D.	2002-2011
Edward L. Bove, M.D.	2004-2012
David H. Harpole, Jr., M.D.	2004-2012
Douglas E. Wood, M.D.	2004-2012
J. Wayne Meredith, M.D.	2008-2012
John H. Calhoon, M.D.	2003-2013
R. Scott Mitchell, M.D.	2007-2013
Curtis G. Tribble, M.D.	2007-2013
Mark S. Allen, M.D.	2004-2014

John E. Mayer, Jr., M.D.  
Richard J. Shemin, M.D.  
Mary E. Klingensmith, M.D.  
John G. Byrne, M.D.

2007-2014  
2005-2015  
2012-2015  
2013-2015

\*deceased

## INTRODUCTION

The American Board of Thoracic Surgery (ABTS) publishes this Booklet of Information for prospective candidates for examination, and others who are interested, to outline the rules and regulations established by the Board in conformity with its policies. The Booklet is revised yearly.

The American Board of Thoracic Surgery does not publish a list of residency training programs in thoracic surgery, nor does it maintain a list of available openings in training programs. Institutions whose training programs are approved by the Residency Review Committee for Thoracic Surgery (RRC-TS) and accredited by the Accreditation Council for Graduate Medical Education (ACGME) are listed in the Graduate Medical Education Directory published annually by the American Medical Association or on the ACGME website. Only individuals who have successfully completed training in such programs will be admitted for examination.

The American Board of Thoracic Surgery is an active member of the American Board of Medical Specialties (ABMS). The Board also functions in close cooperation with the RRC-TS, and through it, with the ACGME. The Board also maintains close liaison with the Thoracic Surgery Directors Association (TSDA).

A list of Diplomates of the Board appears in *The Official American Board of Medical Specialties Directory of Board Certified Medical Specialists*. The ABMS also offers an online, searchable database of board-certified physicians, including thoracic surgeons, on its web site ([www.abms.org](http://www.abms.org)) under *Is Your Physician Certified*.

Inquiries addressed to the American Board of Thoracic Surgery may be referred to one or more committees of the Board. Replies to such letters of inquiry may, therefore, be delayed for several weeks.

Address all communications to the Executive Director:

David A. Fullerton, MD  
Executive Director  
American Board of Thoracic Surgery, Inc.  
633 North St. Clair Street, Suite 2320  
Chicago, Illinois 60611

## MISSION STATEMENT

The mission of the American Board of Thoracic Surgery is to serve the public by promoting excellence in practice through rigorous evaluation and examination, providing leadership in education, and ensuring high standards for professionalism, lifelong learning and certification.



## HISTORY

Certification of thoracic surgeons was first discussed by the American Association for Thoracic Surgery (AATS) at its 1936 meeting in Rochester, Minnesota, but it was the consensus that no need for certification existed at that time. As a result of the rapid growth and importance of thoracic surgery as a specialty during the succeeding years, however, the need for a specialty board in thoracic surgery became apparent.

Recognizing that a large part of its membership wanted such a board, the AATS President in 1945 reappointed the original committee to study the matter. The committee's report at the 1946 AATS meeting, held in Detroit, prompted a recommendation that a Board of Thoracic Surgery be formed in affiliation with the American Board of Surgery (ABS).

An AATS committee was appointed to confer with a similar committee appointed by the ABS. The necessary steps with the Advisory Board of Medical Specialties were accomplished, and at the AATS meeting, held in St. Louis in May 1947, the committee's report was submitted and adopted unanimously.

Through negotiations, a plan of organization was worked out and approved by the ABS and AATS at their respective meetings in Quebec in 1948. The organization of the Board of Thoracic Surgery was structured in accordance with the provisions of the plan, and the first, or organizational, meeting was held in Detroit on October 2, 1948.

On January 1, 1971, the Board of Thoracic Surgery became a primary board and changed its name to the American Board of Thoracic Surgery. It is a member of the ABMS, which encompasses twenty-four specialties with primary Boards. The purpose of these Boards is to certify physicians who have completed an ACGME approved residency in a specialty, and, through their Maintenance of Certification (MOC) programs, promote lifelong learning and practice improvement. These processes have been instituted in the public interest. A complete history of the ABTS can be found on its web site.

## ORGANIZATION OF THE BOARD

The Board consists of thirteen Directors nominated from the organizations listed below, three At-Large Directors, one Executive Director and one Public Member Director.

The American Association for Thoracic Surgery	4
The Society of Thoracic Surgeons	4
The American Surgical Association	1
The American College of Surgeons	1
The Thoracic Surgery Directors Association	2
The American Board of Surgery	1
At-Large Directors	3
Executive Director, at-large	1
Public Member, at-large	<u>1</u>
Total Membership	18

Each cooperating organization selects nominees, and the Board elects Directors judged to be the best suited to meet its current needs. A self-nomination process for the three at Large-seats is held and the Board elects Directors judged to be the best suited to meet its current

needs, The term of each Director is six years. The Executive Director serves for seven years and the Public Member for two years, renewable twice.

### **PURPOSE AND FUNCTIONS OF THE BOARD**

The primary purpose and most essential function of the Board are to protect the public by establishing and maintaining high standards in thoracic surgery. To achieve these objectives, the Board has established qualifications for examination and procedures for certification and Maintenance of Certification. The requirements and procedures are reviewed regularly and modified as necessary.

Board certification in a medical specialty is evidence that a physician's qualifications for specialty practice are recognized by his or her peers. It is not intended to define the requirements for membership on hospital staffs, to gain special recognition or privileges for its Diplomates, to define the scope of specialty practice, or to state whom may or may not engage in the practice of the specialty. Specialty certification of a physician does not relieve a hospital's governing body from responsibility in determining the hospital privileges of such specialist.

The Board does not consider any physician to be a candidate for examination until he or she has made formal application and has been accepted for examination. Acceptance for examination acknowledges only that the candidate has successfully fulfilled the requirements and does not recognize that he or she is a specialist in thoracic surgery.

The Board uses and/or recognizes the terms "board eligible" or "board qualified" for only those individuals who have an approved application for certification and who are still in the examination process as defined on page 21 under the Examination Sequence section.

### **DEFINITION OF THORACIC SURGERY**

Thoracic Surgery encompasses the operative, perioperative, and surgical critical care of patients with acquired and congenital pathologic conditions within the chest. Included are the surgical repair of congenital and acquired conditions of the heart, including the pericardium, coronary arteries, valves, great vessels and myocardium.

In addition to operations and management of diseases of the thoracic and thoracoabdominal aorta, the scope of practice includes the evaluation of vascular disease, the exposure, cannulation, reconstruction and treatment of the carotid, brachiocephalic, axillary, iliac and femoral vessels.

It also includes pathologic conditions of the lung, esophagus and chest wall, tumors of the mediastinum, and diseases of the diaphragm and pericardium. Management of the airway and injuries to the chest are also within the scope of the specialty.

The American Board of Thoracic Surgery considers it inappropriate to exclude its Diplomates from credentialing for care of thoracic surgical patients in a critical care setting based on the Diplomate's training or board certification. Our Diplomates have been trained in critical care management of thoracic surgical patients and they have successfully completed both written and oral examinations, which cover the critical care aspects of the thoracic surgical patients.

## **CLINICAL COMPETENCE IN THORACIC SURGERY**

Clinical competence in thoracic surgery requires factual knowledge and technical skills in the preoperative evaluation, operative management, and postoperative care of patients, including critical care, with pathologic conditions involving thoracic structures. Precise definition of the scope of thoracic surgery as well as the current methods used to assess education, knowledge and experience have been developed to ensure that an individual who is certified by the American Board of Thoracic Surgery has met certain standards and qualifications.

The scope of thoracic surgery encompasses a knowledge of normal and pathologic conditions of both cardiovascular and general thoracic structures. This includes congenital and acquired lesions (including infections, trauma, tumors, and metabolic disorders) of both the heart and blood vessels in the thorax, as well as diseases involving the lungs, pleura, chest wall, mediastinum, esophagus, and diaphragm. In addition, the ability to establish a precise diagnosis, an essential step toward proper therapy, requires familiarity with diagnostic procedures such as cardiac catheterization, angiography, electrocardiography, echocardiography, imaging techniques, endoscopy, tissue biopsy, and biologic and biochemical tests appropriate to thoracic diseases. It is essential that the thoracic surgeon be knowledgeable and experienced in evolving techniques, such as laser therapy, endovascular procedures, electrophysiologic procedures and devices, circulatory support, thoracoscopy and thoracoscopic surgery. Thoracic surgeons receive education and experience in the critical care of patients with cardio-thoracic diseases, as an integral part of residency.

The factual knowledge and technical skills necessary to treat patients with thoracic conditions are obtainable in a thoracic surgery residency program that is approved by the RRC-TS and accredited by the ACGME. The highest educational standards are best achieved in residency programs in which close supervision and instruction as well as progressive individual responsibility for operative and postoperative care are possible.

The American Board of Thoracic Surgery realizes that an examination primarily tests the ability to reason and the factual knowledge acquired by the candidate. The limitations of examinations alone to assess clinical competence are well recognized, and an important part of the responsibility for determining clinical competence rests upon the director of each thoracic surgery residency program. It is for this reason that only applicants who complete an accredited thoracic surgery residency program will be considered for examination. It is during the period of residency that the trainee's ethical and moral character, judgment, technical skills, and abilities to cope with a wide variety of clinical problems can be assessed most accurately. Thus, the endorsement of the candidate by the Program Director and faculty are required to complete eligibility for certification by the American Board of Thoracic Surgery.

Following the completion of residency in an accredited program, written and oral examinations are given to assess the trainee's capabilities. These examinations are constructed and given annually by the American Board of Thoracic Surgery. Consultation and assistance in developing the examinations and analyzing the results are obtained from psychometricians and other experts. The validity and reliability of the examination process are scrutinized continually. To enter the examination process, candidates must submit to the ABTS office an application that includes the specifics of their thoracic surgical operative experience in residency and the signature of the Program Director indicating satisfactory completion of the residency program. A passing score on the examination acknowledges that the candidate possesses a broad knowledge base that is necessary to be clinically competent in thoracic surgery.

The current methods for establishing the candidate's qualifications are reviewed periodically and revised, when appropriate, in a continuing effort to assure the public that thoracic surgeons certified by the American Board of Thoracic Surgery have been adequately educated in and are competent to practice the specialty.

### **GENERAL REQUIREMENTS**

Certification by the American Board of Thoracic Surgery may be achieved by completing one of the following four pathways and fulfillment of specific requirements:

1. Pathway One is the successful completion of a full residency in General Surgery approved by the ACGME, followed by the successful completion of an ACGME-approved Thoracic Surgery residency. Successful completion of a 4/3 General Surgery/Thoracic Surgery Joint Training Program approved by the ACGME fulfills the requirements of Pathway One.

With regards to single accreditation, osteopathic candidates will need to complete at least three years (PGY 3-5) in a general surgery residency program that was fully accredited by the ACGME, followed by the successful completion of an ACGME-approved Thoracic Surgery residency.

Pathway Two is the successful completion of a full (5 years) residency in General Surgery, Cardiac Surgery, or Vascular Surgery approved by the Royal College of Physicians and Surgeons of Canada, followed by the successful completion of an ACGME-approved Thoracic Surgery residency.

Pathway Three is the successful completion of a six-year integrated Thoracic Surgery residency developed along guidelines established by the TSDA and approved by the ACGME (RRC-TS).

Pathway Four is the successful completion of an ACGME-approved Vascular Surgery residency (5 years) that can lead to primary certification by the ABS followed by the successful completion of an ACGME-approved Thoracic Surgery residency.

These pathways must provide adequate education and operative experience in cardiovascular and general thoracic surgery.

2. An ethical standing in the profession and a moral status in the community that are acceptable to the Board.
3. A satisfactory performance on the American Board of Thoracic Surgery examinations.
4. A currently registered full and unrestricted license to practice medicine granted by a state or other United States jurisdiction. The license must be valid at the time of application for admission to examination and maintained until certified by the ABTS. A temporary, limited license such as an educational, institutional, or house staff permit is not acceptable to the Board, unless the candidate is currently enrolled in a subspecialty residency approved by the ACGME. Candidates for certification are required to notify the Board if any restrictions are placed on their license during the certification process.

5. For residents who began their Thoracic Surgery residency in July 2003 and after, certification by the ABS is optional rather than mandatory.

### **RESIDENCY REQUIREMENTS**

Candidates must have fulfilled all of the American Board of Thoracic Surgery residency requirements that are in force at the time their applications are received.

Candidates for certification must complete a minimum of 24 months of residency training in thoracic and cardiovascular surgery in a program accredited by the RRC/TS. This must include 12 months of continuous senior responsibility. These requirements also pertain to the 6-year integrated residency programs. The director of the thoracic training program is required to approve the application form by signature, certifying that the candidate has satisfactorily completed the residency in thoracic surgery as described above. Once an application is received, it is considered the official and only record. The Board assumes that the appropriate signatures authenticate the accuracy of the case lists and all other information submitted on the application.

Education and adequate operative experience in both general thoracic surgery and cardiovascular surgery are essential parts of any approved thoracic surgery residency program, irrespective of the area of thoracic surgery in which a candidate may choose to practice.

### **OPERATIVE CASE CRITERIA**

The operative experience requirement of the American Board of Thoracic Surgery has two parts. One is concerned with the intensity or volume of cases, and the other with the distribution of cases (index cases).

#### 1. Surgical Volume (Intensity)

The Board's operative experience requirements include an annual average of 125 major operations performed by each resident based on the following lengths of training programs:

2-year programs: 125 major cardiothoracic operations for each year, for a total of 250 major cases;

3-year programs: 125 major cardiothoracic operations for each year, for a total of 375 major cases;

4/3 joint training programs: 125 major cardiothoracic operations for the last two years of training, for a total of 250 major cases;

6-year programs:

For Residents who start on or after July 1, 2017:

PGY 1-3: 125 cases must be cardiothoracic operations, up to 50 which may be component cases that include sternotomy and closure, thoracotomy and closure, LIMA takedown, saphenous vein harvest, aortic and venous cannulation, proximal and distal anastomosis, other vascular anastomosis, gastric/esophageal mobilization).

PGY 1-3: 150 cases need to be ABS index cases with the following minimum distribution:

Vascular	25
Skin, Soft Tissue, Breast	10
Head/Neck, Trauma, Plastics	15
Alimentary	20
Abdomen	30
Pediatric	10
Lap-basic	30
Lap-advanced	10

PGY 1-3: An additional 100 cases must come from either the ABS list or from cardiothoracic cases. The total number of cases in the first three years of the I-6 must meet or exceed 375 cases, or 125 per year.

PGY 4-6: 125 major cardiothoracic operations for each year, for a total of 375 major cases

For Residents who started between July 1, 2011 and June 30, 2017:

PGY 1-3: 375 operations averaged over 3 years of which 125 must be cardiothoracic operations, up to 50 which may be component cases that include sternotomy and closure, thoracotomy and closure, LIMA takedown, saphenous vein harvest, aortic and venous cannulation, proximal and distal anastomosis, other vascular anastomosis, gastric/esophageal mobilization).

PGY 4-6: 125 major cardiothoracic operations for each year, for a total of 375 major cases

PGY 1-6: Of the 750 required index cases during PGY 1-6, 150 need to be ABS index cases with the following minimum distribution:

Vascular	25
Skin/soft tissue/breast	10
Head/neck	5
Alimentary tract	20
Abdomen	30
Operative trauma	5
Pediatric	10
Plastic	5
Lap-basic	30
Lap-advanced	10

This guideline on intensity of cases conforms with the Program Requirements in Thoracic Surgery as published by the ACGME and the RRC-TS.

The application of any candidate whose supervised operative experience fails to meet the requirements listed above may be referred to the Board's Credentials Committee for review.

2. Index Cases (Distribution)

Index Cases are Full Credit Cases only. Index cases are defined as the resident being the primary surgeon. They do not include first assistant cases, unless specifically stated.

**The application of a candidate whose operative experience does not include the required number of index cases will be sent to the Credentials Committee for review.**

Residents must choose either the General Thoracic Pathway or the Cardiothoracic Pathway. Residents must meet the operative numbers entirely from one pathway during the last years of their residency as outlined below:

- 2-year programs – during PGY 6-7
- 3-year programs – during PGY 6-8
- 4/3 joint training programs – during PGY 4-7
- 6-year programs – during PGY 4-6

The number of index cases required to meet the minimal acceptable standards in the various areas are:

**For 5/2 or 5/3 residents starting thoracic training on or after July 1, 2017**  
**For I-6 residents starting PGY 5 on or after July 1, 2017**  
**For 4/3 residents starting thoracic training on or after July 1, 2017**

Cardiac Focused		Requirements	General Thoracic Focused	
Total	Subtotal		Subtotal	Total
		<b>CONGENITAL HEART DISEASE</b>		
	5	Primary surgeon		
	15	First assistant	10	
<b>20</b>		<b>Subtotal Congenital Heart Disease</b>		<b>10</b>
		<b>ADULT CARDIAC</b>		
60		<b>Acquired Valvular Heart Disease</b>		30
	25	Aortic Valve Repair/Replacement	15	
	15	Mitral Valve Repair/ Replacement	5	
	5	Tricuspid Valve Repair/Replacement, Annuloplasty	5	
	5	TAVR as primary		
	10	TAVR as assistant	5	
<b>80</b>		<b>Myocardial Revascularization</b>		<b>35</b>

	15	<b>Re-Do Sternotomy**</b> **Can be double-counted with any Cardiac procedure	5	
15		<b>Interventional Wire-based Procedures</b>		5
	5	Left Heart Catheterization, PCI, TEVAR, Mitral Clip		
	10	Intra-aortic Balloon Pump	5	
5		<b>Conduit Dissection and Preparation**</b> Open or Endoscopic Saphenous/Radial Vein harvest and preparation **Can be double-counted with CABG		5
10		<b>Aortic Procedures**</b> Any combination of Ascending Aorta/Aortic Root Replacement, Descending Aortic Replacement, Aortic Dissection, Aortic Trauma **Can be double-counted with CABG/Valve Procedures		5
10		<b>Arrhythmia Surgery**</b>		
	5	Left Atrial or Biatrial Maze, Pulmonary Vein Isolation, Right-sided Maze, Isthmus Ablation **Can be double-counted with CABG/Valve procedures		
	5	Pacemaker insertion or Pacemaker removal		
5		<b>Cardiopulmonary Bypass set-up and pump run with Perfusionist</b>		5
10		<b>Circulatory Assist**</b> Any combination of ECMO, VAD **Can be double-counted with another operation		5
<b>195</b>		<b>Subtotal Adult Cardiac Experience</b>		<b>90</b>
		<b>GENERAL THORACIC</b>		
60		<b>Lung</b>		105
	30	Major Anatomic Resections: Open, VATS, or RATS (Segmentectomy, Lobectomy, Pneumonectomy, Lung Transplantation**) **Only 1 Pneumonectomy can be counted along with Bilateral Lung Transplant.	50	
	5	VATS/RATS Lobectomy specifically	25	



	25	Open or VATS Lung Biopsy/Wedge Resection	30	
10		<b>Pleura</b>		25
		Major (Empyema Decortication, Pleurectomy Decortication, other Pleural Tumor Resection)	5	
		Minor (Biopsy, Pleurectomy, VATS Sympathectomy, VATS Bleb Resection, VATS Pleurodesis, Evacuation of Hemothorax)	15	
		Interventional: In-dwelling Cuffed Pleural Catheter Insertion	5	
5		<b>Chest Wall and Diaphragm</b> Chest Wall Resection**, Rib Resection, Rib Plating, Pectus Repair, Diaphragm Resection or Plication, Repair of Morgagni, Bochdalek, Traumatic Hernia **Can be double-counted with Pulmonary Resection		10
5		<b>Mediastinum</b> Tumor/Cyst/Mass Resection via Open, VATS, or Robotic Technique		10
0		<b>Tracheobronchial – Airway Surgery**</b> Tracheal Resection, Laryngotracheal Resection, Sleeve Lobectomy, Carinal Pneumonectomy, Transplantation Airway Anastomosis **Sleeve Lobectomy and Carinal Pneumonectomy can be double-counted with Major Anatomic Lung Resection		5
10		<b>Esophagus</b>		35
	5	Esophagectomy (Open or MIE)	20	
	5	Benign Esophagus-Repair of Perforation, Drain Perforation, Diverticulectomy, Myotomy, Hiatal Hernia Repair	10	
		Laparoscopic Hiatal or Paraesophageal Repair	5	
<b>90</b>		<b>Subtotal General Thoracic Experience</b>		<b>190</b>
<b>305</b>		<b>TOTAL MAJOR OPERATIVE EXPERIENCE</b>		<b>290</b>
		<b>MINOR PROCEDURES**</b> **All may be double-counted		
30		<b>Bronchoscopy</b>		40
		Simple (BAL, Diagnostic, TBBx, Bx)	30	
		Complex (Laser, Dilation, Stent, Navigational Bronchoscopy, Photodynamic Therapy, Cryotherapy)	10	

10		<b>UGI Endoscopy</b>		30
		Simple (Diagnostic, Bx)	20	
		Complex (Dilation, Stent, EUS, EMR)	10	
15		<b>Mediastinal Assessment</b>		55
	5	Mediastinoscopy, Chamberlain (Mediastinotomy)	15	
		EBUS/FNA	10	
	10	Mediastinal Node Dissection/Systematic Sampling during Lung Resection	30	
<b>55</b>		<b>Subtotal Minor Procedures</b>		<b>125</b>
<b>360</b>		<b>TOTAL OPERATIVE EXPERIENCE</b>		<b>415</b>

<b>ADDITIONAL REQUIREMENTS</b>				
50		<b>Consultation Experience</b>		50
	25	New Patients	25	
	25	Follow-up Patients	25	
20		<b>Multidisciplinary Patient Management Conferences</b> Any combination of Tumor Board, Cardiac Catheterization Conference, Multidisciplinary Clinics, Transplant Selection Committee Meetings, etc.		20
75		<b>Cardiothoracic Critical Care Case Management experience (Provide log sheet for each case with at least one case from each of the seven categories. See details below)</b>		75
	20	General Thoracic	20	
	20	Cardiac and Congenital	20	
	35	Any additional Cardiothoracic Critical Care case	35	
20 hrs		<b>Simulation (Hours required from any technique-based simulation curriculum or simulation of Cardiopulmonary Bypass Management)</b>		20 hrs

For Residents who start their training between July 1, 2012 and June 30, 2017

<b>Cardiac Focused Total</b>		<b>Requirements</b>	<b>General Thoracic Focused Subtotal Total</b>	
		<b>CONGENITAL HEART DISEASE</b>		
10		Primary surgeon		

10		First assistant		
		Primary surgeon or first assistant		10
<b>20</b>		<b>Subtotal Congenital Heart Disease Experience</b>		<b>10</b>
		<b>ADULT CARDIAC</b>		
50		<b>Acquired Valvular Heart Disease</b> Any combination of mitral valve, aortic valve, and/or tricuspid valve replacement or repair. **Tricuspid valve procedures performed with CABG can be double-counted with CABG		25
80		<b>Myocardial Revascularization</b>		40
	15	<b>Re-Do Sternotomy</b> **Can be double-counted with any cardiac procedure	5	
20		<b>Interventional Skills or Procedures</b> Any combination of intra-aortic balloon pump (IABP), intravascular ultrasound, angiography, transvenous pacemaker insertion, image-guided intervention over a wire, percutaneous tracheostomy, tracheal/esophageal stent placement, PleurX® catheter (or similar pleural drainage catheter) insertion, ultrasound-guided pigtail catheter placement for pleural drainage, radiofrequency ablation, and TEVAR.		20
10		<b>Conduit Dissection and Preparation</b> Open or endoscopic saphenous/radial vein harvest and preparation **Can be double-counted with CABG		5
10		<b>Aortic Procedures</b> Any combination of ascending aorta/aortic root replacement, descending aortic replacement, TEVAR, aortic dissection, aortic trauma **Can be double-counted with CABG/Valve Procedures ** TEVAR can be double-counted as an aortic procedure and interventional skills		5
5		<b>Arrhythmia Surgery</b> Left atrial or biatrial maze, pulmonary vein isolation, right-sided maze, isthmus ablation **Can be double-counted with CABG/valve procedures		0
4		<b>Cardiopulmonary Bypass set-up and pump run</b>		4

		<b>with perfusionist</b>		
10		<b>Circulatory Assist/Cardiac Transplant</b> Any combination of IABP, ECMO, VAD, Cardiac Transplant **Can be double-counted with another operation		5
<b>189</b>		<b>Subtotal Adult Cardiac Experience</b>		<b>104</b>
		<b>GENERAL THORACIC</b>		
60	30	<b>Lung</b> Major anatomic resections (segmentectomy, lobectomy, pneumonectomy, lung transplantation**) **Only 1 pneumonectomy can be double-counted for bilateral lung transplant.	50	100
	5	Major VATS/robotic anatomic resections	10	
	25	Open or VATS lung biopsy/wedge resection, lung procurement for transplantation	40	
10		<b>Pleura**</b> Major (decortication, pleurectomy decortication, extrapleural pneumonectomy (EPP), or other tumor resection) Minor (biopsy, pleurectomy, VATS sympathectomy, VATS Bleb resection, VATS pleurodesis) **EPP can be double-counted as Pleura and Lung procedures	5 15	20
3		<b>Chest Wall and Diaphragm**</b> Chest wall resection, pectus repair, diaphragm resection or plication, repair of Morgagni, Bochdalek, or traumatic hernia **Can be double-counted with pulmonary resection		6
5		<b>Mediastinum</b> Tumor/cyst/mass resection via open, VATS, or robotic technique		10
0		<b>Tracheobronchial – Airway Surgery**</b> Tracheal-bronchial resection/reconstruction, laryngotracheal resection/reconstruction, airway anastomosis **Sleeve lobectomy and carinal pneumonectomy can be double-counted with major anatomic lung resection **Lung transplantation can be counted as either Tracheobronchial or Lung		5

15	10 5	<b>Esophagus</b> Esophagectomy (Open or minimally invasive) Benign Esophagus-Major Repair of perforation, drain perforation, diverticulectomy, myotomy, hiatal hernia repair  <b>For the GT focused pathway, at least 5 of the 30 esophageal procedures must be performed minimally invasively.</b>	20 10	30
<b>93</b>		<b>Subtotal General Thoracic Experience</b>		<b>171</b>
<b>302</b>		<b>TOTAL MAJOR OPERATIVE EXPERIENCE</b>		<b>285</b>
		<b>MINOR PROCEDURES**</b> **All may be double-counted		
30		<b>Bronchoscopy</b> Simple (BAL, diagnostic, TBBx, Bx) Complex (laser, dilation, stent, navigational bronchoscopy, photodynamic therapy)	30 10	40
10		<b>UGI Endoscopy</b> Simple (diagnostic, Bx) Complex (dilation, stent, EUS, EMR)	20 5	25
20	10 5	<b>Mediastinal Assessment</b> Mediastinoscopy EBUS/FNA Chamberlain or mediastinal node dissection	15 10 5	30
<b>60</b>		<b>Subtotal Minor Procedures</b>		<b>95</b>
<b>362</b>		<b>TOTAL OPERATIVE EXPERIENCE</b>		<b>380</b>
		<b>ADDITIONAL REQUIREMENTS</b>		
100	50 50	<b>Consultation Experience</b> New Patients Follow-up Patients	50 50	100
20		<b>Multidisciplinary patient management conferences</b> Any combination of tumor board, cardiac catheterization conference, multidisciplinary clinics, transplant selection committee meetings, etc.		20
75		<b>Cardiothoracic critical care case management</b>		75

	20 20	<b>experience (provide log sheet for each case with at least one case from each of the seven categories. See Addendum A)</b> General thoracic Cardiac and congenital	20 20	
20 hrs		<b>Simulation (hours required from any technique-based simulation curriculum or simulation of cardiopulmonary bypass management)</b>		20 hrs
X		Previous or current FLS, ATLS, ACLS certification required		X

### **OPERATIVE EXPERIENCE CREDIT**

The Board recognizes that supervised operative experience in a well-organized teaching setting that is approved by the RRC-TS protects the patient, who, in most instances, is the personal and identifiable responsibility of a faculty surgeon. This supervised experience optimally prepares the candidate to begin the independent practice of cardiothoracic surgery after the completion of residency.

The Credentials Committee has been authorized by the Board to reject a candidate if his or her operative experience during the thoracic surgery residency is considered to be inadequate. The candidate, the Program Director, and the RRC-TS will be notified if such action is taken. If the Credentials Committee finds the applicant's operative experience inadequate and additional training is required, **the additional training must be approved by the Board in advance.** Should the Program Director determine that a resident needs additional training beyond the number of years that have been approved by the ACGME and the RRC-TS, before submitting an application, **this additional training must also be approved by the Board in advance.**

Even though emphasis on one or another facet of thoracic surgery (pulmonary, cardiovascular, esophageal, thoracic trauma, etc.) may have characterized a candidate's residency experience, the candidate is nevertheless held accountable for knowledge concerning all areas of the field, including extracorporeal perfusion (physiological concepts, techniques, and complications), cardiac assist devices, endovascular techniques, management of dysrhythmias, thoracic oncology and VATS. In addition, a candidate should have had responsibility for the care of pediatric cardiac patients. The candidate should also have an in-depth knowledge of the critical care of acutely ill patients in the intensive care unit. This requires an understanding of cardiorespiratory physiology, circulatory assist devices, respirators, blood gases, metabolic alterations, cardiac output, hyperalimentation, and many other areas.

Full credit will be allowed for supervised operative experience in a well-organized teaching setting only when the following criteria are met:

- a. The resident participated in the diagnosis, preoperative planning, surgical indications, and selection of the appropriate operation;

- b. The resident performed, under appropriate supervision in a well-organized teaching setting approved by the RRC-TS, those technical manipulations that constituted the essential parts of the procedure itself;
- c. The resident was substantially involved in postoperative care including critical care.

Supervision and active participation by the thoracic surgery faculty are required in preoperative, intraoperative, and postoperative care. Thoracic surgery faculty is interpreted to be any faculty member with ABMS certification at a participating institution of the program and is not limited to ABTS certified Thoracic Surgeons.

The Board also emphasizes that first-assisting at operations is an important part of resident experience, particularly in complex or relatively uncommon cases.

### **APPLICATIONS**

Before applying for examination, prospective candidates should consider whether they are able to meet the minimum requirements of the Board. All residents must meet the operative case requirements as listed in this booklet and which are available on the Board's web site at [www.abts.org](http://www.abts.org).

Residents are required to use the ABTS online application. Directions for utilizing the online application should be carefully followed since some of the sections need to be completed by the resident and the Thoracic Surgery Program Director. A list of the documents that must be submitted with the online application is available on the web site. A copy of the resident's U.S. valid license to practice medicine must be included with the application materials.

All residents who start their training on July 1, 2013 or after are required to use the ACGME's OpLogs to track their cases. The operative case logs are considered the property of the resident and are not kept in the Board office once the resident is certified.

When the resident is ready, the online application is reviewed by the Program Director. Once he/she approves the application, the Program Director submits it online to the Board office. The application that is submitted is considered a final document. An incomplete or incorrectly completed application may delay processing for one year. Residents are encouraged to address questions regarding the American Board of Thoracic Surgery requirements to their Program Director.

The deadline for submitting the completed application is September 15, 2017. Failure to meet that deadline may result in a delay of at least one year. Candidates are notified of their eligibility for examination when their applications have been approved.

The American Board of Thoracic Surgery takes particular note of the problems facing those with a disability and stands ready to alter its examination procedures in such a way that candidates who are competent to practice thoracic surgery have the opportunity to take the Board's examination under circumstances that accommodate the individual's disability. Individuals requiring special consideration because of a disability should notify the Board at least 60 days before the September 15 deadline for submitting an application.

## **EXAMINATIONS**

The Board's policy is to consider a candidate for examination only after he or she has successfully completed a thoracic surgery residency program approved by the RRC-TS and the ACGME.

Separate written and oral examinations are held annually at times and places determined by the Board. Information regarding the dates and places of the examinations is published in the *Journal of Thoracic and Cardiovascular Surgery* and the *Annals of Thoracic Surgery* and on the ABTS web site ([www.abts.org](http://www.abts.org)).

The 2017 Part II (oral) examination will be held on June 9 and 10, 2017 in downtown Chicago.

The 2017 Part I (written) examination is scheduled for December 11, 2017. The examination will be given in an electronic format at Pearson Professional Testing Centers located throughout the United States.

### **PART I**

#### **Written Examination**

The examination consists of a written examination designed primarily to assess cognitive skills. The content of the questions on this examination represents uniform coverage of all aspects of the thoracic surgery specialty, including adult cardiac, congenital cardiac, general thoracic, and cardiothoracic critical care. A list of the exam content can be found on the Board's web site.

### **PART II**

#### **Oral Examination**

Successful completion of the Part I (written) examination is a requirement for admission to the Part II (oral) examination. The oral examination is designed to test the candidate's knowledge, judgment, and ability to correlate information in the management of clinical problems in general thoracic and cardiovascular surgery. Candidates are expected to be proficient in adult cardiac, congenital cardiac, general thoracic and cardiothoracic critical care.

## **EXAMINATION SEQUENCE**

Candidates need to apply for the examination within one year of the satisfactory completion of their thoracic surgery residency. The Board considers the one year to include two registration cycles. Any candidate applying for the examination one year or more after the satisfactory completion of residency will be considered individually by the Credentials Committee. To be eligible, any recommended additional training must be completed before an application can be submitted.

After a candidate is declared eligible for the written examination (Part I), he or she must pass Part I within 3 years. The candidate who successfully completes Part I of the examination then must pass Part II within the succeeding 3 years. Candidates must certify within a total of seven years from the end of their thoracic surgery residency.

Candidates who fail an examination (Part I or Part II) are eligible to repeat the examination the following year, for a total of three years for each exam.



Candidates who fail either Part I or Part II of the examination three times, or do not pass either part of the examination within the allotted time period of three years, will be required to complete an additional thoracic surgical educational program **which must be approved in advance** by the Board before they will be permitted to retake the examination. The required additional training must be completed within the succeeding 2-year period after failing either the written or the oral examination. Candidates who are completing additional training will be considered “in training” and the Board’s eligibility rule will be on hold until that training has been completed. Candidates who complete the required additional training must have their eligibility for examination reviewed by the Executive Director and/or the Credentials Committee. Candidates will be given two more opportunities to take the examination (Part I or Part II) within the succeeding two years.

Candidates who fail either Part I or Part II a fifth time will be required to complete another approved thoracic surgery residency before they will be eligible to re-apply for examination by the Board.

### **FEES**

2017 Registration fee (not refundable)	\$ 600.00
2017 Part I Examination fee	\$ 1,300.00
2017 Part I Re-Examination fee	\$ 1,300.00
2017 Part II Examination fee	\$ 1,525.00
2017 Part II Re-Examination fee	\$ 1,525.00

Applications must be electronically submitted by the end of the day on September 15. Applications after this date will not be accepted.

Candidates who do not appear for their scheduled examination (Part I or Part II) or who cancel less than six weeks prior to either examination may forfeit their examination fee.

The Board is a non-profit corporation, and the fees from candidates are used solely to defray actual expenses incurred in conducting examinations and carrying out the business of the Board. The Directors of the Board serve without remuneration.

### **APPEALS**

Individuals who receive an unfavorable ruling regarding their applications from a committee of the Board may appeal such determination by mailing a notice of appeal to the office of the American Board of Thoracic Surgery within 45 days of the date such ruling was mailed. A copy of the appeals procedure will be mailed to the candidate or can be found on our website at [www.abts.org](http://www.abts.org).

Individuals who are in the written exam process may only request reconsideration regarding potential fraud, misconduct or irregularities. There is no appeal for the content of the examination, the sufficiency or accuracy of the answers given, scoring of the examination, nor any other matter. Any individuals who wish to seek reconsideration on the basis of fraud, misconduct or irregularities may immediately upon conclusion of the written examination, and in any event no later than 7 days following the written examination, request that the Board allow him or her to retake the examination at no additional cost.

Individuals in the oral exam process who believe that any of the examiners have been unfair or biased during portions of the oral examination may immediately upon conclusion of the examination request of the Executive Director of the Board a reexamination by another examiner using different case protocols covering similar subject matter. If the Executive Director and the other Officers determine that there are reasonable grounds, the individual shall be reexamined immediately by a Board member. In such instances, only the score given by the re-examiner will be considered.

### **CHEMICAL DEPENDENCY**

Qualified applicants who have a history of chemical dependency that has been reported to the Board and who submit documentation suitable to the Board that their dependency has been under control for a period of at least two years will be admitted to the examination process.

For candidates who are already in the examination process and develop a chemical dependency as reported to the Board, the process will be suspended until the candidate can provide documentation suitable to the Board that the condition has been under control for a period of two years. At that time, the candidate will be readmitted to the examination process. The requirement to be accepted for examination within one year of completion of an approved thoracic surgery residency will not be waived.

### **CERTIFICATION**

After a candidate has met the requirements for eligibility and passed the examination, a certificate attesting to the candidate's qualifications in thoracic surgery will be issued by the Board. The certificate is valid for 10 years.

### **MAINTENANCE OF CERTIFICATION**

Applicants who are certified in thoracic surgery are issued certificates that are valid for 10 years from the date of certification, after which the certificates will no longer be valid. Certificates can be renewed before expiration by fulfilling the requirements for Maintenance of Certification (MOC) specified by the American Board of Thoracic Surgery at that time. A MOC Booklet is available on the Board's web site at [www.abts.org](http://www.abts.org).

### **ANNUAL MAINTENANCE OF CERTIFICATION FEE**

An annual MOC Fee is required of all Diplomates except those who are retired and/or disabled. The fee, which is cumulative, is not assessed to Diplomates in the year of their certification. The Board will not respond to inquiries about the Diplomate's certification status until the fee is paid each year. Diplomates must be current with the annual fee in order to participate in the MOC process.

### **DENIAL OR REVOCATION OF CERTIFICATE**

No certificate shall be issued or a certificate may be revoked by the Board if it determines that:

- a. the candidate for certification or Diplomate did not possess the required qualifications and requirements for examination, whether such deficiency was known to the Board or any Committee thereof before examination or at the time of issuance of the certificate as the case may be;

- b. the candidate for certification or Diplomate withheld information in his or her application or made a material misstatement or any other misrepresentation to the Board or any Committee thereof, whether intentional or unintentional;
  - c. the candidate for certification or Diplomate was convicted by a court of competent jurisdiction of any felony or misdemeanor involving moral turpitude and, in the opinion of the Board, having a material relationship to the practice of medicine;
  - d. the candidate for certification or Diplomate had his or her license to practice medicine revoked or was disciplined or censured by any court or other body having proper jurisdiction and authority because of any act or omission arising from the practice of medicine; or
  - e. the candidate for certification or Diplomate had a history of chemical dependency or developed such during the certification process and failed to report same to the Board.
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*Revised January 2017*

## **ADDENDUM A CT CRITICAL CARE MANAGEMENT**

An essential component of cardiothoracic surgical practice and training is the critical care management of patients with cardiothoracic surgical diseases and operations. The ABTS requires documentation of at least 75 patients in which the applicant has substantially participated in this critical care. At least 20 of those patients must be cardiac and at least 20 thoracic. This care is documented by logging the care provided to each patient with the provided structure below.

Case documentation:

Select patient who best represent all the essential aspects of intensive care unit management. Each resident is to develop a CT Critical Care Index Case (CCIC) log that best represent the full breadth of critical care management. At least two out of the seven categories listed below should be applicable to each chosen patient. The completed CCIC log should include experience, with at least one patient, in all seven of the following essential categories:

1. Ventilatory Management
  - a. Etiology/indications
  - b. Ventilatory modes/techniques
  - c. Ventilator days
  - d. Weaning method
2. Bleeding (non-trauma) greater than 3 units necessitating transfusion/monitoring in ICU setting
  - a. Etiology
  - b. Coagulopathy: yes no
  - c. Hypothermia: yes no
  - d. Autotransfusion: yes no
3. Hemodynamic Instability
  - a. Etiology
  - b. Volume resuscitation
  - c. Inotropic/pressure support: yes no
  - d. Mechanical assistance of cardiac failure: (IABP, LVAD, BiVAD)
4. Organ Dysfunction/Failure (etiology/mode of management)
  - a. Pulmonary
  - b. Renal
  - c. Hepatic
  - d. Central nervous system
  - e. Endocrine (Hypothyroidism, Adrenal insufficiency, Panhypopituitarism, Diabetes insipidus, SIADH)
5. Dysrhythmias
  - a. Etiology
  - b. Drug management
  - c. Therapeutic interventions
  - d. Monitoring
6. Invasive Line Management/Monitoring
  - a. Arterial cannulation

- b. Pulmonary artery catheter
- c. Intracardiac catheter
- d. Complications

7. Nutrition

- a. Route (parenteral/enteral)
- b. Indications/contraindications
- c. Solution formulation
- d. Complication