

Latest Revisions to US CTS Surgical Training Curriculums

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Cardiothoracic Surgery Training

- **Training pathways**
- **Index Case and Volume Requirements**
- **Competencies**
- **Duty Hours**
- **Milestone Project**
- **Maintenance of Certification**

Training Pathways

Training Pathways

Independent Program (Traditional)

- 5 yrs GS Residency
- 2/3 yrs Thoracic Residency

Joint Surgery/Thoracic Surgery Program (4+3)

- 7 yrs in one institution
- 4+ yrs in GS
- 2+ years in Thoracic Surgery
- 8-12 months PGY 4 & 5 Thoracic Surgery

Training Pathways

Integrated Program (6 yrs)

- 6 yrs one institution
 - Thoracic Surgery Program Director
- 24-36 months Core General Surgery Education
- 36-48 months of Cardiothoracic Surgery
- 6th year Chief Resident

Training Pathways

- **Effective July 1, 2007**
- **General Thoracic Pathway**
- **Cardiothoracic Pathway**

Three Year Traditional Program

Thoracic and Cardiovascular Surgery Resident Rotations

Cardiac and Thoracic Tracks

General Thoracic Track

First Year		Second Year			Third Year	
6 months	6 months	6 months	3 months	3 months	12 months	
General Thoracic	Adult Cardiac	Adult Cardiac	Congenital	General Thoracic	General Thoracic	

Cardiac Track

First Year		Second Year		Third Year
6 months	6 months	9 months	3 months	12 months
Adult Cardiac	General Thoracic	Adult Cardiac	Congenital	Adult Cardiac

Year 1

Thoracic
Surgery

1

CT
Anesthesia

2

CV
ICU

3

Trauma
Surgery

4

Vascular
Surgery

5

Vascular
Surgery

6

Cardio.
Imaging

7

Cardiology
Teaching

8

Adult
Cardiac Surg

9

General
Surgery

10

General
Surgery

11

General
Surgery

12

Year 2

Transplant
Renal

1

Transplant
Liver

2

Vascular
Surgery

3

Vascular
Surgery

4

Coronary
Care Unit

5

Coronary
Care Unit

6

Cardiac
Surgery

7

General
Surgery

8

General
Surgery

9

General
Surgery

10

Thoracic
Surgery

11

Interventional
Cardiology

12

Year 3

General
Surgery

1

General
Surgery

2

General
Surgery

3

General
Surgery

4

Thoracic
Surgery

5

Thoracic
Surgery

6

Thoracic
Surgery

7

Echocardi-
ography

8

Cardiac
Surgery

9

Cardiac
Surgery

10

Cardiac
Surgery

11

CV
ICU

12

Year 4

Pediatric
Cardiac

1

Pediatric
Cardiac

2

Pediatric
Cardiac

3

Cardiac
Surgery

4

Cardiac
Surgery

5

Cardiac
Surgery

6

Thoracic
Surgery

7

Thoracic
Surgery

8

Thoracic
Surgery

9

Vascular
Surgery

10

Vascular
Surgery

11

Vascular
Surgery

12

Year 5

Cardiac
Surgery

1

Cardiac
Surgery

2

Cardiac
Surgery

3

Cardiac
Surgery

4

Cardiac
Surgery

5

Cardiac
Surgery

6

Thoracic
Surgery

7

Thoracic
Surgery

8

Thoracic
Surgery

9

Elective

10

Elective

11

Elective

12

Year 6

Cardiac or
Thoracic

1

Cardiac or
Thoracic

2

Cardiac or
Thoracic

3

Cardiac or
Thoracic

4

Cardiac or
Thoracic

5

Cardiac or
Thoracic

6

Elective

7

Elective

8

Elective

9

Cardiac or
Thoracic

10

Cardiac or
Thoracic

11

Cardiac or
Thoracic

12

Index Case and Volume Requirements

Index Cases

Resident Participated

- Diagnosis, Pre-operative planning, Surgical Indications, Selection of Operation

Resident Performed

- Technical manipulations that constitute the essential parts of the procedures

Resident Involved

- Post-operative care
- Critical care

Cardiothoracic Pathway

Congenital Heart Disease	20
Primary	10
First Assistant	10
Adult Cardiac	150
Acquired Valvular Heart	50
Myocardial Revascularization	80
Re-Operations	15
Aorta	5
Other	15

Cardiothoracic Pathway

Lung, Pleura, Chest Wall	50
Pneumonectomy, lobectomy, segment.	30
Other	20
Mediastinum (resection)	5
Esophagus	15
Esophagectomy/Resection	10
Benign esophageal disease/Other	5
VATS	15
Total Major Cases	255

Cardiothoracic Pathway

Endoscopy	40
Bronchoscopy	20
Esophagoscopy	10
Mediastinoscopy	10
Consultative Experience	100
New Patients	50
Follow-up	50

General Thoracic Pathway

Congenital Heart Disease **10**

The 10 cases can be either Primary or First Assistant

Adult Cardiac **75**

Acquired Valvular Heart

Myocardial Revascularization **20**

Re-operations **5**

Aorta **0**

Other **15**

General Thoracic Pathway

Lung, Pleura, Chest Wall	100
Pneumonectomy, lobectomy, segment.	50
Other	50
Mediastinum (resection)	20
Esophagus	30
Esophagectomy/Resection	20
Benign esophageal disease	5
Other	5
VATS	30
Total Major Cases	255

General Thoracic Pathway

Endoscopy	90
Bronchoscopy	40
Esophagoscopy	25
Mediastinoscopy	25
Consultative Experience	100
New Patients	50
Follow-up	50

Surgical Volume

2 year program

≥ 125 major CTS/yr

≥ 250 major CTS

3 year program

≥ 125 major CTS/yr

≥ 375 major CTS

4/3 year program

≥ 125 major CTS/yr

≥ 250 major CTS

Surgical Volume

6 year program

- PGY 1-3

- ≥ 375 operations averaged over 3 yrs
125 CTS (50 component)

- PGY 4-6

- ≥ 125 major CTS/yr
- ≥ 375 major CTS

- PGY 1-6

- 150 ABS cases

Surgical Volume

PGY 1-6: 150 ABS Index Cases

•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

Competencies

Competencies

- **Patient Care**
- **Medical Knowledge**
- **Practice-based Learning and Improvement**
- **Interpersonal and communication skills**
- **Professionalism**
- **System Based practice**

Patient Care

- Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health

Patient Care

- patient care plans, demonstrate technical ability, use information technology, and evaluate diagnostic studies
- provide preoperative management, selection and timing of operative intervention, provide post-operative management, provide critical care
- correlate the pathologic and diagnostic aspects of cardiothoracic disorders
- experience in endovascular stents

Medical Knowledge

- Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care

Medical Knowledge

- **will know current medical information, and critically evaluate scientific information**

Practice-based Learning and Improvement

- **Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning**

Practice-based Learning and Improvement

- **identify strengths, deficiencies, and limits in one's knowledge and expertise**
- **set learning and improvement goals**
- **identify and perform learning activities**
- **analyze practice with quality improvement methods, and implement changes**
- **locate, appraise, and assimilate evidence from scientific studies**
- **practice lifelong learning**

Interpersonal and Communication Skills

- **Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals**

Interpersonal and Communication Skills

- **communicate effectively with patients, families, physicians, other health professionals and the public**
- **work effectively as a member or leader of a health care team**
- **act in a consultative role to other physicians and health professionals**
- **maintain comprehensive, timely, and legible medical records, if applicable**

Professionalism

- **Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles**

Professionalism

- **compassion, integrity, and respect**
- **responsiveness to patient needs that supersedes self-interest**
- **respect for patient privacy and autonomy**
- **accountability to patients, society and the profession**
- **sensitivity and responsiveness to a diverse patient population**
- **high standards of ethical behavior**

System Based Practice

- **Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles**

System Based Practice

- **various health care delivery settings**
- **coordinate patient care**
- **incorporate considerations of cost awareness and risk-benefit analysis**
- **advocate for quality patient care**
- **work in interprofessional teams**
- **identify system errors and implement systems solutions**

Duty Hours

Duty Hours

- **Professionalism, Personal Responsibility, and Patient Safety**
- **Transitions of Care**
- **Alertness Management/Fatigue Mitigation**
- **Supervision**
- **Resident Duty Hours**

Professionalism, Personal Responsibility, and Patient Safety

- To appear for duty “appropriately rested” and “fit to provide” the services required by their patients.
- Promote patient safety and resident well-being in a supportive educational environment.
- interdisciplinary clinical quality improvement and patient safety programs.

Professionalism, Personal Responsibility, and Patient Safety

- **The learning objectives of the program must:**
 - **be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events**
 - **not be compromised by excessive reliance on residents to fulfill non-physician service obligations.**

Professionalism, Personal Responsibility, and Patient Safety

- **assurance of their fitness for duty**
- **management of their time before, during, and after clinical assignments**
- **recognition of impairment, including illness and fatigue, in themselves and in their peers**
- **honest and accurate reporting of duty hours, patient outcomes, and clinical experience data**

Transitions of Care

- **Clinical Assignments designed to minimize number of transitions in patient care**
- **Effective, structured hand-over processes**
- **Resident competence in communicating with team members in hand-over process**
- **Schedules that inform all members of team of who is responsible for what**

Alertness Management/Fatigue Mitigation

- **Educate all faculty members and residents to recognize the signs of fatigue and sleep deprivation**
- **Educate all faculty members and residents in alertness management and fatigue mitigation**
- **Adopt fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning, such as naps or back-up call schedules.**

Alertness Management/Fatigue Mitigation

- **Each program must have a process to ensure continuity of patient care in the event that a resident may be unable to perform his/her patient care duties.**
- **The sponsoring institution must provide adequate sleep facilities and/or safe transportation options for residents who may be too fatigued to safely return home**

Resident Duty Hours

- 80 hours/week
 - Includes in-house call **and all moonlighting**
 - PGY-1 cannot moonlight
- One day free every week
 - No at-home call during free days

Resident Duty Hours

- **PGY-1 must not exceed 16 hour duty period**
- **PGY-2 and above maximum 24 hour duty period**
 - **No new clinical duties after 24 hours**
 - **4 additional hours allowed (must document reasons)**

Resident Duty Hours

PGY-1

- Should have 10 hours; must have 8 hours between scheduled duty periods
- Intermediate residents
 - Same but must have 14 hours free after 24 hours in-house duty
- Residents in final years
 - 8 hour free desirable
 - Less than 8 hour off not allowed

Milestone Project

Milestones

- **Next step in the outcome project**
- **Milestone definition: description (in specific behavioral terms) of the performance level expected of a resident by a particular time during their residency**
- **Aggregate resident performance on the milestones used as an indicator of a program's educational effectiveness**
- **Board use as part of eligibility for certification**

Maintenace of Certification

Maintenance of Certification

- **January 2008**
- **10 year cycle**
- **5 year benchmark**

Maintenance of Certification

5 year Benchmark

- Verification

- Licensure

- Hospital credentialing

- SESATS

Maintenance of Certification

10 year

- Secured exam
- Documentation of practice Improvement
- References
- Verification
 - Licensure hospital credentialing

Maintenance of Certification

I Professional Standing

- Valid, full and unrestricted license**
- Privileges at a JCAHO or other**
- Letters of reference**

Maintenance of Certification

II Lifelong learning and Self Assessment

- 150 hours AMA Category 1 CME / 5yrs
 - 30 hours / year
 - 75 hours in CTS
- SESATS

Maintenance of Certification

III Cognitive Expertise

- Comprehensive written exam
- 8th – 10th year
- All areas of CTS

Maintenance of Certification

IV Evaluation of Performance in Practices

- Peer Evaluation
- Care summaries
- Outcome database