

Joint Council on Thoracic Surgery Education

Workshop: Creating an integrated 6-year CT surgery curriculum

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6-year CT surgery Curriculum

Disclosures

None

6-year CT surgery Curriculum

Didactic Education

1. Assume ownership
2. Current approach
 - a. Assigned readings
e.g., TSDA curriculum
 - b. Conferences
Cardiac/Thoracic
Congenital
Cardiology/Cardiac Surgery
Mortality/morbidity
 - c. Rotation specific readings/conferences
e.g. General Surgery, Vasc Surgery, etc.

6-year CT surgery Curriculum

Thoracic Surgery Curriculum (TSC)

Moodle learning management system

Web-Brain content management

Articles, chapters, videos, case scenarios

Multiple templates



THORACIC SURGERY BRAIN - TheBrain 7

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THORACIC SURGERY BRAIN 1: Core Surgical Foundation 2: CardioVascular Surgery 3: Thoracic Surgery 4: Congenital Disease

2: CardioVascular Surgery

Heart Valve Disease

- Cardiac Conduction System Disor...
- Cardiopulmonary Bypass, Myoca...
- Cardiothoracic Trauma
- Diseases of the Pericardium & My...
- General Management of a Patient...
- Great Vessel Disease
- Heart Failure and Cardiac Transpl...
- Ischemic Heart Disease
- Peripheral Vascular Surgery
- Prosthetic Valve Disease
- Pulmonary Valve Disease
- Tricuspid Valve Disease
- Valve Disease Imaging

Chapter 4. Valvular Heart Disease

- Aortic Valve Disease
 - Endocarditis
 - Guidelines
 - Mitral Valve Disease

Aortic Valve ... Aortic Regurgitation Knowledge Aortic Regurgitation Aortic Valve Disease Heart Valve Disease

Notes

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Thought Tags Search Reports Calendar

Heart Valve Disease

Label:

Sort: Name

Type: Untyped Private

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6-year CT surgery Curriculum

Thoracic Surgery Curriculum (TSC)

(JCTSE, ABTS, TSDA, TSRA)

88 topics

Multiple templates

2-year traditional (3)

3-year traditional (2)

1-6 integrated (2)

6-year CT surgery Curriculum

Thoracic Surgery Curriculum (TSC)

Weekly Conference Structure

R1-3: 88 topics over 3 yrs

Basic level

R4-6: 88 topics over 3 yrs

Advanced level

Topics	Core ABTS Curriculum Topic	Topic Editor	Section Editor	Basic Level Content (PGY1-3)	Advanced Level Content (PGY4-6)	Week	Moodle Links
CV 01	Cardiac Surgery General Management I	Kane, Carpenter	Baker	Cardiac Anatomy Cardiac Physiology	Advanced Anatomy Advanced Physiology	1 2	http://ictse.mrooms.net/course/view.php?id=1
CV 02	Cardiac Surgery General Management II	Kane, Carpenter	Baker	Cardiovascular pharmacology, Microbiology	Pathology	3 4	http://ictse.mrooms.net/course/view.php?id=2
CV 03	Cardiac Surgery General Management III	Kane, Carpenter	Baker	Diagnosis, evaluation and treatment Risk assessment Cardiopulmonary resuscitation	Risk assessment guidelines Cardiac Rehabilitation	5 6	http://ictse.mrooms.net/course/view.php?id=3
CV 04	Cardiac Surgery General Management IV	Kane, Carpenter	Baker	management of complications of cardiac surgery cardiac tamponade postoperative management	wound infection/sternal disruption	7-9	http://ictse.mrooms.net/course/view.php?id=4
TS 1	Thoracic Surgery General Management I	Varghese	Vaporciyan	general knowledge including lung anatomy	management	10-11	http://ictse.mrooms.net/course/view.php?id=5
TS 2	Thoracic Surgery General Management II	Varghese	Vaporciyan	physiology	imaging	12-13	http://ictse.mrooms.net/course/view.php?id=6
TS 3	Thoracic Surgery General Management III	Varghese	Vaporciyan	risk assessment lung	postop complications lung	14-15	http://ictse.mrooms.net/course/view.php?id=7
TS 4	Thoracic Surgery General Management IV	Varghese	Vaporciyan	risk assessment esophageal	postop complications esophageal	16	http://ictse.mrooms.net/course/view.php?id=8
CD 1	Congenital Heart Disease General Management I	Subramanyan	Wells	Embryology / Anatomy / Physiology		17-18	http://ictse.mrooms.net/course/view.php?id=9
CD 2	Congenital Heart Disease General Management II	Subramanyan	Wells	Imaging & Diagnosis		19	http://ictse.mrooms.net/course/view.php?id=10
CV 05	Cardiopulmonary bypass/myocardial protection/circulatory support I	Milewski	Baker	Introduction to CPB	Pathophysiology of CPB	20	http://ictse.mrooms.net/course/view.php?id=11
CV 06	Cardiopulmonary bypass/myocardial protection/circulatory support II	Milewski	Baker	Myocardial Protection IABP	Management of Coagulopathy / HIT	21 22	http://ictse.mrooms.net/course/view.php?id=12
TS 5	Neopasm of the lung I	Vaporciyan	Vaporciyan	benign and malignant tumors Epidemiology and genetics signatures presentation		23 24	http://ictse.mrooms.net/course/view.php?id=13
TS 6	Neopasm of the lung II	Vaporciyan	Vaporciyan	Stage I Staging including all staging tools Stage I survival and recurrence patterns	Stage I treatment and multimodality Non-resectional techniques	25 26	http://ictse.mrooms.net/course/view.php?id=14
TS 7	Neopasm of the lung III	Vaporciyan	Vaporciyan	Stage II Staging including all staging tools Stage II survival and recurrence patterns	Stage II treatment and multimodality Non-resectional techniques	27 28	http://ictse.mrooms.net/course/view.php?id=15
TS 8	Neopasm of the lung IV	Vaporciyan	Vaporciyan	Stage III Staging including all staging tools Stage III survival and recurrence patterns	Stage III treatment and multimodality Non-resectional techniques	29 30	http://ictse.mrooms.net/course/view.php?id=16
TS 9	Neopasm of the lung V	Vaporciyan	Vaporciyan	Stage IV Staging including all staging tools Stage IV survival and recurrence patterns	Stage IV treatment and multimodality Non-resectional techniques surgical palliation	31 32	http://ictse.mrooms.net/course/view.php?id=17
TS 10	Neopasm of the lung VI	Vaporciyan	Vaporciyan	Secondary and metastatic neoplasm of the lung	Secondary and metastatic neoplasms: outcomes, treatment	33	http://ictse.mrooms.net/course/view.php?id=18
CD 3	Pediatric Circulatory Support & Perioperative Care	Subramanyan	Wells	Myocardial protection / CPB / Perioperative Care	Circulatory Arrest / Cerebral Protection / ECMO	34	http://ictse.mrooms.net/course/view.php?id=19
CV 07	Ischemic Heart Disease I	Sun, Aldea	Baker	Diagnosis, investigation of IHD Cardiac Imaging	Management guidelines	35 36	http://ictse.mrooms.net/course/view.php?id=20
CV 08	Ischemic Heart Disease II	Sun, Aldea	Baker	Role of PCI, hybrid approaches and non-operative treatment	Combined coronary / carotid disease	37-38	http://ictse.mrooms.net/course/view.php?id=21

TS 11	Benign Lung Conditions I	Mitchell, Meguid	Vaporciyan	Bronchiectasis (knowledge)	Bronchiectasis (patient care)	43	http://ictse.mrooms.net/course/view.php?id=11
				Bacterial Infection (general overview)	Bacterial Infection (nosocomial infection, community acquired)	44	
TS 12	Benign Lung Conditions II	Mitchell, Meguid	Vaporciyan	Tuberculosis and atypical mycobacteria (knowledge)	Tuberculosis and atypical mycobacteria (patient care)	45	http://ictse.mrooms.net/course/view.php?id=12
				Mycotic infection (knowledge)	Mycotic infection (patient care)	46	
TS 13	Benign Lung Conditions III	Donahue, Lau	Vaporciyan	Parasitic Disease (knowledge)	Parasitic Disease (patient care)	47	http://ictse.mrooms.net/course/view.php?id=13
				hemoptysis			
				Interstitial Lung Disease (Knowledge)	Interstitial Lung Disease (patient care)	48	
TS 14	Benign Lung Conditions IV	Lau	Vaporciyan	Emphysema and Bullae (etiology and pathophysiology, indications for bullectomy)	Emphysema and Bullae (Nett trial part 1 and 2, pulmonary rehab)	49	http://ictse.mrooms.net/course/view.php?id=14
CD 4	Left to right shunts	Subramanyan	Wells	ASD /VSD / PAPVR / PDA	AVCD / APW	50-51	http://ictse.mrooms.net/course/view.php?id=4
CD 5	Cyanotic Heart Disease	Subramanyan	Wells	TOF / Basic Transposition	Advanced Transposition / TAPVR / DORV / Truncus Arteriosus / Ebsteins Anomaly	52-53	http://ictse.mrooms.net/course/view.php?id=5
CV 11	Heart Valve Disease I	Fann	Baker	Aortic valve anatomy and physiology	Results of Surgery (AS)	54	http://ictse.mrooms.net/course/view.php?id=11
				AS pathophysiology	Guidelines (AS)	55	
				Diagnosis/assessment	valve selection		
				Indications for operative management (AS)			
CV 12	Heart Valve Disease II	Fann	Baker	AI pathophysiology	Results of Surgery (AI)	56	http://ictse.mrooms.net/course/view.php?id=12
				Diagnosis/assessment	Guidelines (AI)	57	
				Indications for operative management (AI)			
CV 13A	Heart Valve Disease III	Fann	Baker	Mitral valve anatomy physiology	Guidelines (MR)	58-61	http://ictse.mrooms.net/course/view.php?id=13
				MR pathophysiology/natural history	Treatment of Degenerative MR		
				Diagnosis and assessment	Results of Surgery (MR)		
				Indications for operative management (MR)			
CV 13B	Heart Valve Disease III	Fann	Baker	Ischemic MR	Operative Treatment Ischemic MR	62-63	http://ictse.mrooms.net/course/view.php?id=13
					Results of Surgery Ischemic MR		
CV 14	Heart Valve Disease IV	Fann	Baker	MS pathophysiology/natural history	Results of Surgery (MS)	64	http://ictse.mrooms.net/course/view.php?id=14
				Diagnosis and assessment	Guidelines (MS)		
				Indications for operative management (MS)			
CV 15	Heart Valve Disease V	Fann	Baker	Tricuspid valve anatomy and physiology	Results of Surgery (TV)	65	http://ictse.mrooms.net/course/view.php?id=15
				Pulmonary valve	Guidelines (TV)		
				Diagnosis and assessment			
				Indications for operative management (TV)			
CV 16	Heart Valve Disease VI	Fann	Baker	Endocarditis general indications	Operative timing, Prosthetic Valve	66	http://ictse.mrooms.net/course/view.php?id=16
				Antibiotics/prophylaxis	Endocarditis		
CV 17	Heart Valve Disease VII	Fann	Baker	TAVR	TAVR	67	http://ictse.mrooms.net/course/view.php?id=17
TS 15	Disorders of the pleura I	Reddy	Vaporciyan	anatomy and pathophysiology of the pleura	hyperhidrosis	68	http://ictse.mrooms.net/course/view.php?id=15
TS 16	Disorders of the pleura II	Reddy	Vaporciyan	Mesothelioma and fibrous tumors	Mesothelioma and fibrous tumors	69	http://ictse.mrooms.net/course/view.php?id=16
TS 17	Disorders of the pleura III	Reddy	Vaporciyan	lung abscess and empyema (knowledge)	lung abscess and empyema (patient care)	70	http://ictse.mrooms.net/course/view.php?id=17
TS 18	Disorders of the pleura IV	Reddy	Vaporciyan	pleural effusions (general information and benign)	pleural effusions (malignant)	71	http://ictse.mrooms.net/course/view.php?id=18
CD 6	Single Ventricle Lesions	Subramanyan	Wells	Single Ventricle Physiology / Management / Palliative Operations	Single Left Ventricle / Single Right Ventricle / Complex Single Ventricle	72-73	http://ictse.mrooms.net/course/view.php?id=6
CV 18	Great Vessel Disease I	Fullerton, Reece	Baker	General overview	Imaging interpretation	74-75	http://ictse.mrooms.net/course/view.php?id=18
				Vascular pathology			
				Natural history			
CV 19	Great Vessel Disease II	Fullerton, Reece	Baker	Management of Ascending Aneurysms Arch	Aortic Dissection	76-77	http://ictse.mrooms.net/course/view.php?id=19

CV 21	Great Vessel Disease IV	Fullerton, Reece	Baker	Acute Thromboembolic disease	Chronic Thromboembolic Disease Imaging in Thromboembolic Disease	80	http://ictse.mrooms.net/course/view.php?id=100
TS 19	Disorders of the chest wall I	Kim	Vaporciyan	anatomy (basic)	Anatomy (advanced)	81	http://ictse.mrooms.net/course/view.php?id=101
		Kim		diagnosis and imaging of the chest wall (basic)	diagnosis and imaging of the chest wall: (advanced)		
TS 20	Disorders of the chest wall II		Vaporciyan	Chest wall tumor (knowledge, patient care)	chest wall resection and reconstruction and outcomes	82	http://ictse.mrooms.net/course/view.php?id=102
					Inflammatory and infectious conditions	83	
TS 21	Disorders of the chest wall III	Kim	Vaporciyan	Thoracic Outlet syndrome	Congenital and Pectus Deformity	84	http://ictse.mrooms.net/course/view.php?id=103
TS 22	Disorders of the Diaphragm	Yang	Yang	anatomy and pathophysiology	patient management	85	http://ictse.mrooms.net/course/view.php?id=104
				Imaging techniques; physiologic consequences of herniation/paresis	Surgical techniques; required replacement and reconstructive materials		
CD 7	Left ventricular outflow tract obstruction	Subramanyan	Wells	AS / Subaortic Membrane / Supravalvar AS / COA	IAA / Shones Complex /	86	http://ictse.mrooms.net/course/view.php?id=105
CD 8	Right ventricular outflow tract obstruction	Subramanyan	Wells	Pulmonic Stenosis / DCRV	PA VSD / PA IVS / Supravalvar PS	87	http://ictse.mrooms.net/course/view.php?id=106
CV 22	Cardiac Conduction System Disorders I	Lee, Hui	Fann	Anatomy of conduction pathways	Surgical treatment of atrial fibrillation	88-89	http://ictse.mrooms.net/course/view.php?id=107
				Atrial conduction disorders			
				Ventricular conduction disorders			
CV 23	Cardiac Conduction System Disorders II	Lee, Hui	Fann	Pacemakers and AICD	Complications of pacemakers and AICD	90	http://ictse.mrooms.net/course/view.php?id=108
TS 23	Disorders of the mediastinum I	Huang	Yang	mediastinal general knowledge	mediastinal infections	91	http://ictse.mrooms.net/course/view.php?id=109
TS 24	Disorders of the mediastinum II	Huang	Yang	Diagnosis/assessment	Germ cell tumors	92	http://ictse.mrooms.net/course/view.php?id=110
				Lymphoma			
TS 25	Disorders of the mediastinum III	Huang	Yang	mediastinal cysts	misc mediastinal tumor	93	http://ictse.mrooms.net/course/view.php?id=111
					neurogenic tumors		
TS 26	Disorders of the mediastinum IV	Huang	Yang	Thymic knowledge	Thymic tumors patient management/clinical skills	94	http://ictse.mrooms.net/course/view.php?id=112
CD 9	Vascular Rings and Slings / Coronary Anomalies	Subramanyan	Wells	Vascular Ring	Vascular Sling / ALCAPA	95	http://ictse.mrooms.net/course/view.php?id=113
CV 24	Diseases of the Pericardium and Mvocardium I	Bethes Graham	Fann	Pathophysiology (tamponade, constrictive, restrictive)	Pericardial disease patient management	96-97	http://ictse.mrooms.net/course/view.php?id=114
				Diagnosis and imaging			
CV 25	Diseases of the Pericardium and Mvocardium II	Bethes Graham	Fann	cardiac tumor knowledge	cardiac tumor management/technical skills	98	http://ictse.mrooms.net/course/view.php?id=115
CV 26	Diseases of the Pericardium and Mvocardium III	Bethes Graham	Fann	HOCM knowledge	HOCM management/technical skills	99	http://ictse.mrooms.net/course/view.php?id=116
TS 27	Endoscopy	Raymond	Yang	endoscopic anatomy (airway and esophagus)	bronchial and esophageal stents	100	http://ictse.mrooms.net/course/view.php?id=117
				Role of rigid vs flexible	nonsurgical ablative techniques (airway and esophagus)		
TS 28	Endoscopy II	Raymond	Yang	Mediastinoscopy, Chamberlain, EBUS, EUS	Anesthetic management/ventilation during endoscopy	101-102	http://ictse.mrooms.net/course/view.php?id=118
TS 29	Disorders of the Airway I	Geisbert, Mathison	Yang	anatomy of the larynx trachea and bronchus	Techniques for surgical resection	103	http://ictse.mrooms.net/course/view.php?id=119
				Signs/symptoms and presentation of airway disease	Bronchoplastic procedures	104	
TS 30	Disorders of the Airway II	Geisbert, Mathison	Yang	Pathology of tracheal tumors	Medical and oncologic airway disease treatments	105	http://ictse.mrooms.net/course/view.php?id=120
TS 31	Disorders of the Airway III	Geisbert, Mathison	Yang	Signs and symptoms of airway disease and tracheoesophageal fistula	Management of anastomotic complications and treatment of tracheoesophageal fistula	106	http://ictse.mrooms.net/course/view.php?id=121
CD 10	Pediatric Heart and Lung Transplant	Subramanyan	Wells	Basic Heart and Lung Transplant	Advanced Heart and Lung Tx / Devices	107	http://ictse.mrooms.net/course/view.php?id=122

CV 29	Heart Failure and Cardiac Transplant III	Simeone, Mokadem	Fann	LVAD knowledge Adult ECMO	LVAD management/clinical skills	111 http://ictse.mrooms.net/course/view.php?id=32
CV 30	Heart Failure and Cardiac Transplant IV	Simeone, Mokadem	Fann	Transplant knowledge	Transplant knowledge	112-113 http://ictse.mrooms.net/course/view.php?id=31
TS 32	Management of Benign Esophageal Disorders I	Tong, Lin	Yang	Esophageal and gastric anatomy	Anatomy of small bowel and colon as it relates to reconstruction	114 http://ictse.mrooms.net/course/view.php?id=77
TS 33	Management of Benign Esophageal Disorders II	Tong, Lin	Yang	Diagnostic tests and tools and their interpretations	Nonsurgical therapies for motility disorders, reflux and achalasia	115 http://ictse.mrooms.net/course/view.php?id=76
TS 34	Management of Benign Esophageal Disorders III	Tong, Lin	Yang	Pathophysiology of motility disorders, diverticula	Surgical options for motility disorders, diverticula	116 http://ictse.mrooms.net/course/view.php?id=75
TS 35	Management of Benign Esophageal Disorders IV	Tong, Lin	Yang	Pathophysiology of reflux, infections strictures, trauma, and TE fistulas	Surgical options for reflux, infections, strictures, trauma and TEF	117-118 http://ictse.mrooms.net/course/view.php?id=74
CD 11	Adult Congenital Heart Disease	Subramanian	Wells	Guidelines / Management / Common Diseases	AAOCA / Sinus Valsalva Aneurysm / LV Aortic Tunnel	119-120 http://ictse.mrooms.net/course/view.php?id=57
CV 31	Cardiothoracic trauma I	Cooke Sheikh	Fann	general management of Cardiothoracic Trauma aortic and cardiac injury knowledge	aortic injury patient management cardiac injury patient management	121 http://ictse.mrooms.net/course/view.php?id=30
CV 32	Cardiothoracic trauma II	Cooke Sheikh	Fann	chest wall and pulmonary injury knowledge diaphragm injury knowledge	chest wall and pulmonary injury management diaphragm injury management	122 http://ictse.mrooms.net/course/view.php?id=26
CV 33	Cardiothoracic trauma III	Cooke Sheikh	Fann	Esophageal injury knowledge Tracheobronchial injury knowledge	Esophageal injury management Tracheobronchial injury management	123 http://ictse.mrooms.net/course/view.php?id=27
TS 36	Management of Esophageal Neoplasia I	Yang	Yang	Anatomy of esophagus and stomach Anatomy of colon	Screening and prevention Risk assessment	124 http://ictse.mrooms.net/course/view.php?id=73
TS 37	Management of Esophageal Neoplasia II	Yang	Yang	Etiology/epidemiology of esophageal cancer	Esophageal resection options; complications of resection	125 http://ictse.mrooms.net/course/view.php?id=72
TS 38	Management of Esophageal Neoplasia III	Yang	Yang	Diagnosis and staging for esophageal cancer	Barrett's Esophagus: diagnosis and treatment	126 http://ictse.mrooms.net/course/view.php?id=71
TS 39	Management of Esophageal Neoplasia IV	Yang	Yang	Benign Esophageal neoplasms Stage I and II: staging, survival and recurrence patterns	Stage I and II: treatment, multimodality, and non-surgical options	127 http://ictse.mrooms.net/course/view.php?id=70
TS 40	Management of Esophageal Neoplasia V	Yang	Yang	Stage III and IV: staging, survival and recurrence patterns	Stage III and IV: treatment, multimodality, and non-surgical options	128 http://ictse.mrooms.net/course/view.php?id=69
TS 41	Lung transplant I	Shah	Yang	Patient and donor selection	Donor/implantation surgical procedures	129 http://ictse.mrooms.net/course/view.php?id=68
TS 42	Lung transplant II	Shah	Yang	Basic pharmacology of immunosuppression	Management of complications: reperfusion injury, rejection, acute/chronic anastomotic	130 http://ictse.mrooms.net/course/view.php?id=67
CD 12	Congenital Thoracic Disease	Subramanian	Wells	Congenital Thoracic Disease		131-132 http://ictse.mrooms.net/course/view.php?id=56

6-year CT surgery Curriculum

Thoracic Surgery Curriculum (TSC)

Weekly Conference Structure

One resident assigned to given topic to lead discussion

One attending assigned to direct discussion

Additional materials (e.g., Web-Brain, case scenarios, recent cases)

Questions/answer session (SESATS)

Medical Knowledge: Ischemic Heart Disease				
Level 1	Level 2	Level 3	Level 4	Level 5
• Knows basic anatomy and pathology (identifies coronary anatomy on angiogram) • Knows basic cellular and vascular physiology • Lists clinical manifestations of ischemic heart disease (e.g., angina, myocardial infarction) • Lists diagnostic tools available for evaluation of ischemic heart disease • Lists treatment options for ischemic heart disease (e.g., CABG, PCI) • Knows basic complications for ischemic heart disease	• Understands common variations in anatomy and pathology (e.g., left dominant system) • Understands physiologic changes accompanying ischemic heart disease (e.g., ischemia, ischemia reperfusion injury, infarction, recovering myocardium) • Generates differential diagnosis of disease with similar manifestations (e.g., esophageal and aortic problems, pleurisy) • Understands advantages and disadvantages of diagnostic tools in evaluating ischemic heart disease (e.g., EKG vs. echocardiogram vs. angiogram) • Understands advantages and disadvantages of various treatment options for ischemic heart disease • Understands risks, benefits and complications of treatment modalities	• Understands complex integrations between anatomy and pathology (e.g., anomalous coronary artery) • Understands the role of treatment on physiology of ischemic heart disease • Identifies the common variants of the clinical manifestations of ischemic heart disease (e.g., unstable angina, acute myocardial infarction, silent ischemia) • Interprets normal and common abnormalities associated with ischemic heart disease (e.g., reads coronary angiogram, complex EKG) • Identifies appropriate treatment for routine patient with ischemic heart disease. • Familiar with ACC/STS/AATS guidelines • Knows basic outcome literature for ischemic heart disease (e.g., SYNTAX Trial)	• Understands complex variations in anatomy and pathology, including congenital (e.g., able to identify coronary anatomy in reoperative surgery) • Adapts therapeutic management based on understanding of physiology of complications of ischemic heart disease (e.g., post infarct VSD, ischemic mitral regurgitation) • Distinguishes the complex clinical manifestations and complications of ischemic heart disease • Interprets and integrates complex abnormalities associated with ischemic heart disease • Identifies appropriate treatment for complex patient with ischemic heart disease (e.g., hybrid CABG) • Knows outcomes for all treatment modalities and complications, including databases and clinical trials (e.g., STS Database)	• Understands implications of SYNTAX score • Presents on outcomes of ischemic heart disease at local, regional or national meeting
☐	☐	☐	☐	☐
Comments:				

Medical Knowledge: Ischemic Heart Disease				
Level 1	Level 2	Level 3	Level 4	Level 5
- Knows basic anatomy and pathology (identifies coronary anatomy on angiogram) <u>CV 1-B, CV 2-A</u> - Knows basic cellular and vascular physiology <u>CV 1-B</u> - Lists clinical manifestations of ischemic heart disease (e.g., angina, myocardial infarction) <u>CV 7-B</u> - Lists diagnostic tools available for evaluation of ischemic heart disease <u>CV 3-B</u> - Lists treatment options for ischemic heart disease (e.g., CABG, PCI) <u>CV 3-B, CV 8-B</u> - Knows basic complications for ischemic heart disease <u>CV 4-B</u>	- Understands common variations in anatomy and pathology (e.g., left dominant system) <u>CV 1-B, CV 2-A</u> - Understands physiologic changes accompanying ischemic heart disease (e.g., ischemia, ischemia reperfusion injury, infarction, recovering myocardium) <u>CV 1-B, CV 6-B</u> - Generates differential diagnosis of disease with similar manifestations (e.g., esophageal and aortic problems, pleurisy) <u>CV 3-B</u> - Understands advantages and disadvantages of diagnostic tools in evaluating ischemic heart disease (e.g., EKG vs. echocardiogram vs. angiogram) <u>CV 3-B, CV 7-B</u> - Understands advantages and disadvantages of	- Understands complex integrations between anatomy and pathology (e.g., anomalous coronary artery) <u>CV 1-A, CV 2-A</u> - Understands the role of treatment on physiology of ischemic heart disease <u>CV 1-A</u> - Identifies the common variants of the clinical manifestations of ischemic heart disease (e.g., unstable angina, acute myocardial infarction, silent ischemia) <u>CV 10-B</u> - Interprets normal and common abnormalities associated with ischemic heart disease (e.g., reads coronary angiogram, complex EKG) <u>CV 7-B</u> - Identifies appropriate treatment for routine patient with ischemic heart disease <u>CV 8-B</u>	- Understands complex variations in anatomy and pathology, including congenital (e.g., able to identify coronary anatomy in reoperative surgery) <u>CV 1-A, CV 2-A</u> - Adapts therapeutic management based on understanding of physiology of complications of ischemic heart disease (e.g., post infarct VSD, ischemic mitral regurgitation) <u>CV 1-A</u> - Distinguishes the complex clinical manifestations and complications of ischemic heart disease <u>CV 10-A</u> - Interprets and integrates complex abnormalities associated with ischemic heart disease <u>CV 10-A</u> - Identifies appropriate treatment for complex patient with ischemic	- Understands implications of SYNTAX score - Presents on outcomes of ischemic heart disease at local, regional or national meeting Codes: Green – Linked to JC/TSDA National Curriculum <i>e.g. CV 1-B = Topic CV1, (B=Basic, A=Advanced)</i>

6-year CT surgery Curriculum

Assessment

Core competencies (e.g., MedHub)

TSDA In-Training Exam

Mock oral exam

SESATS-Moodle

Direct observation

Skills lab

Mock Oral Examination Assessment—Cardiothoracic Surgery

RESIDENT NAME _____ YR OF TRAINING _____ DATE _____ EVALUATOR _____

MILESTONE OR OTHER add lists _____

Milestone Level	No Knowledge	Novice	Advanced Beginner	Intermediate	Competent
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1. Understand general scenario	0 No understanding Generic questions Stalling	1	2 Some understanding Some appropriate questions for clarification Some hesitation	3	4 Full understanding Appropriate questions for clarification No hesitation
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Additional Comments: _____

2. Anatomy/pathophysiology	0 No/basic knowledge	1	2 Integrate anatomy and pathophysiology	3	4 Understand complex variations
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Additional Comments: _____

3. Diagnostic tests	0 Unclear, generic Unable to interpret Incorrect follow-up tests	1	2 Understand advantages and disadvantages Mostly appropriate interpretation Mostly appropriate follow-up	3	4 Interpret and integrate results Avoids unnecessary tests Appropriate follow-up
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Additional Comments: _____

4. Formulate differential dx	0 Unable to formulate Unclear path	1	2 Moderate list of diff dx Somewhat logical path	3	4 Distinguish complex clinical manifestations/complications Logical path
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Additional Comments: _____

5. Diagnosis	0 No diagnosis	1	2 Mostly correct	3	4 Correct diagnosis
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Additional Comments: _____

6. Treatment plan	0 No/inappropriate plan Does not seek assistance	1	2 Understand advantages and disadvantages of options Seeks qualified assistance	3	4 Appropriate plan or approach Account for complex patient
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Additional Comments: _____

7. Management of Complications	0 Fails to recognize complication	1	2 Recognize complication Incomplete understanding of treatment	3	4 Correctly identify complication and appropriate treatment
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Additional Comments: _____

8. Overall Level of competence	No Knowledge	Novice	Advanced Beginner	Intermediate	Competent
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 Additional Comments: _____

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Patient Care and Technical SKILLS: Ischemic Heart Disease				
Level 1	Level 2	Level 3	Level 4	Level 5
• Orders basic diagnostic and preoperative assessment tests for ischemic heart disease (e.g., cardiac cath, stress test) • Lists basic treatment options for routine ischemic heart disease (e.g., medical management, PCI vs. CABG) • Demonstrates basic surgical skills (simulation vs. OR)	• Interprets and prioritizes diagnostic and physiologic assessment tests for routine patient with ischemic heart disease • Recognizes routine post-operative complications (e.g., CVA, shock, tamponade, interprets abnormal EKG) • Suggests treatment plan for patient with routine ischemic heart disease • Assesses and harvests conduits (e.g., vein mapping) • Performs surgical opening and closing • Provides basic intraoperative assisting • Performs proximal coronary anastomosis	• Establishes a diagnostic and assessment plan for patients with routine ischemic heart disease (e.g., role of functional testing in ischemic heart disease) • Manages routine post-operative complications (e.g., return to the OR vs. return to cath lab) • Selects ideal treatment option for patient with routine ischemic heart disease.(e.g., institutes treatment per ACC/STS/AATS guidelines) • Institutes and weans patient from cardiopulmonary bypass • Performs routine CABG	• Establishes a diagnostic and assessment plan for complex patients with ischemic heart disease • Manages complex post-operative complications(e.g., need for ventricular assist) • Selects ideal treatment option for patient with complex ischemic heart disease (e.g., combined coronary and carotid disease) • Manages complex coronary disease (e.g., redo CABG, VSD, ischemic MR, off pump)	• Independently performs reoperative coronary bypass grafting • Independently performs coronary enterectomy
☐	☐	☐	☐	☐
Comments:				

Patient Care and Technical SKILLS: Ischemic Heart Disease				
Level 1	Level 2	Level 3	Level 4	Level 5
• Orders basic diagnostic and preoperative assessment tests for ischemic heart disease (e.g., cardiac cath, stress test) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Lists basic treatment options for routine ischemic heart disease (e.g, medical management, PCI vs. CABG) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Demonstrates basic surgical skills (simulation or OR) (Dir Obs, Sim)	• Interprets and prioritizes diagnostic and physiologic assessment tests for routine patient with ischemic heart disease (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Recognizes routine post-operative complications (e.g., CVA, shock, tamponade, interprets abnormal EKG) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Suggests treatment plan for patient with routine ischemic heart disease (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Assesses and harvests conduits (e.g., vein mapping) (Dir Obs) • Performs surgical opening and closing (Dir Obs) • Provides basic intraoperative assisting (Dir Obs) • Performs proximal coronary anastomosis (Dir Obs, Sim)	• Establishes a diagnostic and assessment plan for patients with routine ischemic heart disease (e.g., role of functional testing in ischemic heart disease) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Manages routine post-operative complications (e.g., return to the OR vs. return to cath lab) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Selects ideal treatment option for patient with routine ischemic heart disease.(e.g., institutes treatment per ACC/STS/AATS guidelines) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Institutes and weans patient from cardiopulmonary bypass (Dir Obs, Sim- CPB assessment) • Performs routine CABG (Dir Obs, Sim?)	• Establishes a diagnostic and assessment plan for complex patients with ischemic heart disease (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Manages complex post-operative complications(e.g., need for ventricular assist) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Selects ideal treatment option for patient with complex ischemic heart disease (e.g., combined coronary and carotid disease) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev) • Manages complex coronary disease (e.g., redo CABG, VSD, ischemic MR, off pump) (ITE, SESATS, Mock Oral, Dir Obs, Chart Rev, Sim)	• Independently performs reoperative coronary bypass grafting (OR-Dir Obs) • Independently performs coronary endarterectomy (OR-Dir Obs)

6-year CT surgery Curriculum

Skills Lab-Technical Skills

R1-R3:

Fundamentals of surgery

Knot-tying

Basic suturing

Instrument and tissue handling

Aortic cannulation

Vessel anastomosis

Valve sutures

6-year CT surgery Curriculum

Skills Lab-Technical Skills

R4-R6:

Cardiopulmonary bypass

AV and MV surgery

Coronary artery anastomosis

Crisis management

Potential complications

6-year CT surgery Curriculum

Assessment-Technical Skills

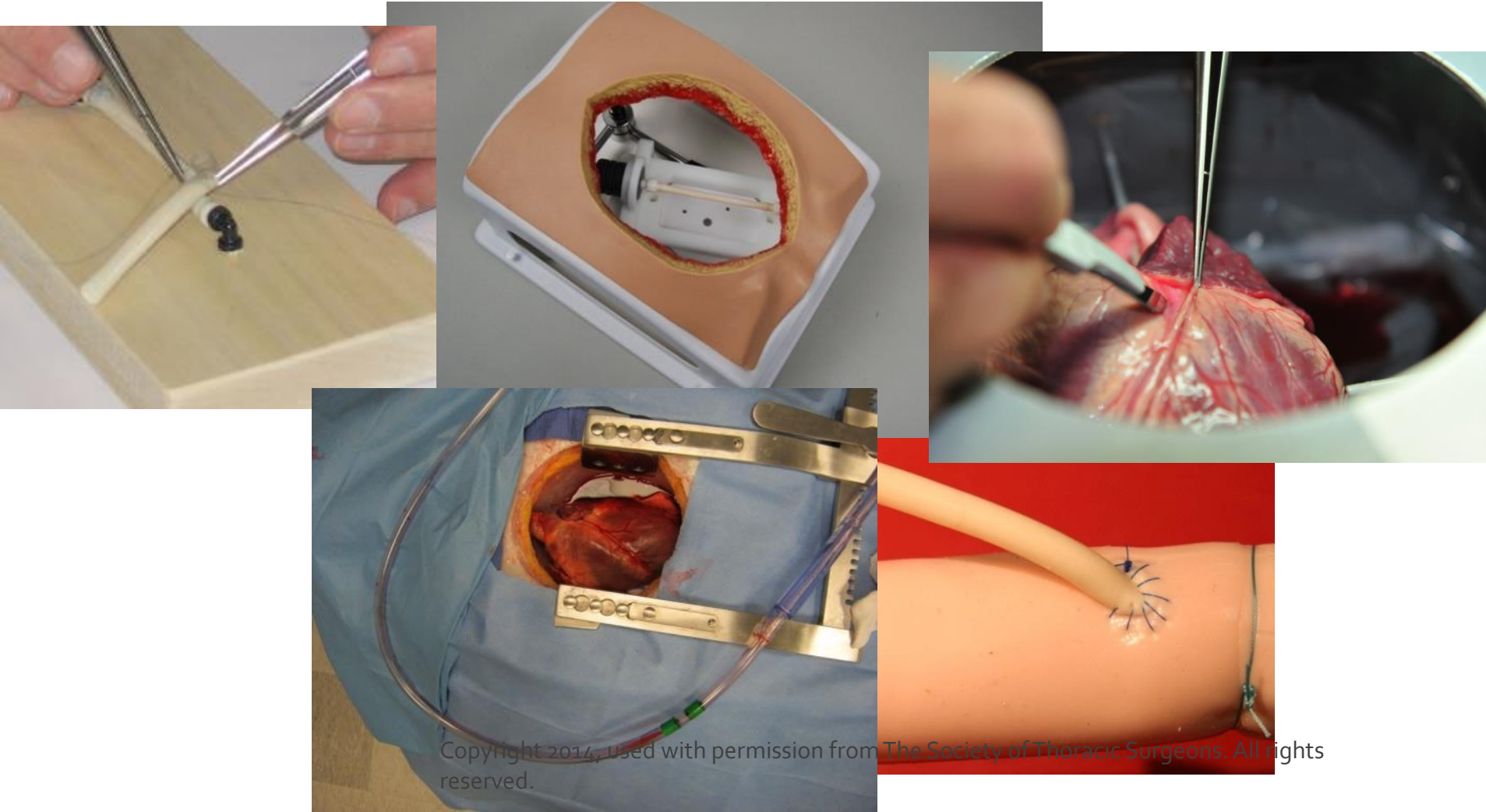
Direct observation

Intraoperative

Skills laboratory

6-year CT surgery Curriculum

ANASTOMOSIS SIMULATORS



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Assessment--Vessel Anastomosis

RESIDENT NAME _____ YR OF TRAINING _____ DATE _____

EVALUATOR _____ TIME TO COMPLETION _____

	Poor				Excellent
1. Arteriotomy	1	2	3	4	5
	Not identify artery Off-midline Multiple "tracks" Injury to back wall Marked irregular edge		Partial artery exposure Mainly midline Thick single "track" Close to back wall Mild irregular edge		Full artery exposure Consistent midline Thin single "track" No injury to back wall Smooth edge

Additional Comments:

2. Graft orientation	1	2	3	4	5
	Unable to orient Not know start point Not know end point Marked hesitation		Orient with some hesitation Start with some hesitation Knows end point with Some hesitation		Proper heel-toe orientation Consistent start Knows end point No hesitation

Additional Comments:

3. Bite	1	2	3	4	5
	Irregular entry/exit Hesitant, multiple punctures Inconsistent distance from edge		Mostly regular entry/exit Mostly single puncture Mostly consistent from edge		Consistent regular entry/exit Consistent single puncture Consistent from edge

Additional Comments:

4. Spacing	1	2	3	4	5
	Uneven/irregular spacing Irregular distance from previous bite		Mostly even spacing Mostly consistent distance from previous bite		Consistent even spacing Consistent distance from previous bite
Additional Comments:					
5. Needle holder use	1	2	3	4	5
	Awkward finger placement Unable to rotate instrument Awkward and not facile Inconsistent needle placement		Functional finger placement Hesitant when rotating Moderate facility Generally good placement		Comfortable, smooth finger placement Smooth rotation High facility Consistent proper placement
Additional Comments:					
6. Use of forceps	1	2	3	4	5
	Awkward or no traction Unable to expose Not use to stabilize needle		Moderate proper traction Able to assist in exposure Able to stabilize but rough		Consistent proper traction Consistent proper exposure Knows when to stabilize, gentle
Additional Comments:					

7. Needle angles	1	2	3	4	5
	Not aware of angles		Understand angles, not consistent		Consistent correct angles
	Not compensate for depth		Partial compensation for depth		Compensate for depth
	Does not consider subsequent angles		Partial consideration of subsequent angles		Consistent adjustment for subsequent angles

Additional Comments:

8. Needle transfer	1	2	3	4	5
	Marked hesitation in mounting needle		Able to mount needle with hand and partial manipulation		Able to mount needle and manipulate needle easily

Additional Comments:

9. Suture management	1	2	3	4	5
	Not use tension		Tension use inconsistent		Proper use of tension
	Suture entangled		Sutures occasionally get in way		Suture consistently not in way

Additional Comments:

10. Knot tying	1	2	3	4	5
	Marked hesitancy, slow speed		Moderate facility, moderate speed		Consistent facility, no hesitancy
	No follow through		intermittent follow through		Consistent follow through
	Not able to tie, breakage		Able to tie and tension,		Consistent tension and tight
	Loose or "air" knot		intermittently loose		

Additional Comments:

11 .Hand Mechanics	1	2	3	4	5
	No pronation or supination Awkward finger/hand motion No wrist motion		Incomplete pronation or supination Hesitant finger/hand motion Incomplete wrist motion		Able to modulate pronation/supination Smooth, comfortable motion Smooth, appropriate wrist motion

Additional Comments:

12. Use of both hands	1	2	3	4	5
	Awkward /not coordinated use Non-dominant hand neglect		Moderately coordinated use Moderate use of non-dominant hand to assist/expose		Smooth, seamless coordination Full use of non- dominant hand to assist/expose

Additional Comments:

13. Economy of time and motion	1	2	3	4	5
	Marked hesitation Not aware of goal Unable to do task		Some hesitation Some awareness of goal Able to do task but discontinuous		No hesitation Fully aware of goal Able to do task smoothly

Additional
Comments:

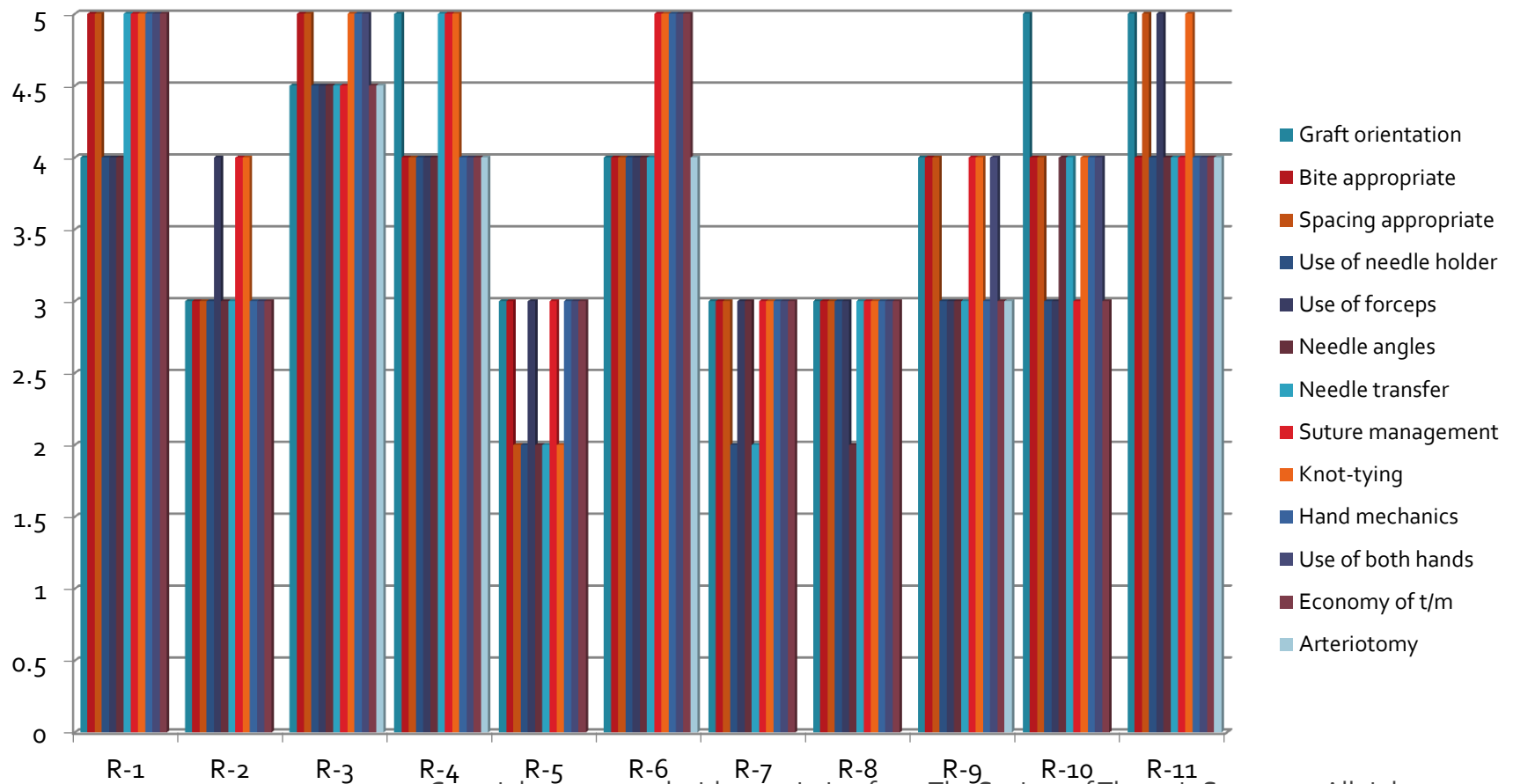
Level of competence	1	2	3	4	5
Overall	Pass	Fail			

General Definitions:

5. Excellent, able to accomplish goal without hesitation, showing excellent progress and flow
4. Good, able to accomplish goal deliberately, with minimal hesitation, showing good progress and flow
3. Average, able to accomplish goal with hesitation, discontinuous progress and flow
2. Below average, able to partially accomplish goal with hesitation
1. Poor, unable to accomplish goal; marked hesitation

Assessment in CT Surgery Technical Skills

Coronary Artery Anastomosis Assessment—Quarterly



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6-year CT surgery Curriculum

DISCUSSION

Assessment—Aortic Valve Replacement

RESIDENT NAME _____ YR OF TRAINING _____ DATE _____
EVALUATOR _____

	Poor	Ave	Excel
1. Aortotomy and stay suture	1 Initial aortotomy too low or too high and in wrong orientation Improper use of scalpel/scissors Not correct stay sutures Marked irregular edge Marked hesitation	2 Initial aortotomy correct but going in slightly wrong orientation Hesitation with scalpel/scissor Partially correct stay sutures Mild irregular edge Some unsteadiness/hesitation	3 Proper location of aortotomy and correct orientation Controlled use of scalpel/scissor Proper stay suture placement Smooth edge No hesitation
Additional Comments: _____			
2. Excise aortic leaflets	1 Not identify leaflet hinge/annulus Not know start point Injury to annulus Not able to decalcify Not aware of debris	2 Inconsistent leaflet excision Start with some hesitation Some injury to annulus Partially able to decalcify Partial awareness of debris	3 Proper leaflet excision Consistent start No injury to annulus Good decalcification Aware and removed debris
Additional Comments: _____			
3. Sizing annulus	1 Not know how to size Not understand valve chart Not know sizer-valve discrepancy	2 Able to size with some hesitation Some understanding of chart Some knowledge of sizer	3 Proper use of sizer Proper use of chart Understand sizer-valve discrepancy
Additional Comments: _____			
4. Needle holder use	1 Awkward finger placement Unable to rotate instrument Awkward and not facile Inconsistent needle placement	2 Functional finger placement Hesitant when rotating Moderate facility Generally good needle placement	3 Comfortable, smooth finger placement Smooth rotation High facility Consistent proper needle placement
Additional Comments: _____			
5. Needle angles	1 Not aware of angles Not compensate for depth Does not consider subsequent angles	2 Understand angles, not consistent Partial compensation for depth Partial consideration of subsequent angles	3 Consistently correct angles Compensate for depth Consistent adjustment for subsequent angles
Additional Comments: _____			

6. Needle removal from annulus	1 Not follow needle curve Excess trauma to annulus	2	3 Incomplete follow needle curve Some trauma to annulus	4	5 Proper follow needle curve No additional trauma
Additional Comments:					
7. Needle transfer	1 Marked hesitation and difficulty mounting needle	2	3 Able to mount needle with hand and some difficulty with needle manipulation	4	5 Able to mount needle and manipulate needle easily
Additional Comments:					
8. Tissue handling	1 Awkward or no traction Unable to expose Rough with tissue/trauma	2	3 Moderate proper traction Able to assist in exposure Able to stabilize tissue but rough	4	5 Consistent proper traction Consistent proper exposure Knows when to stabilize, gentle
Additional Comments:					
9. Depth of bite	1 Irregular entry/exit Hesitant, multiple punctures Inconsistent distance from edge Injured conduction system	2	3 Mostly regular entry/exit Mostly single puncture Mostly consistent from edge Close to conduction system	4	5 Consistent regular entry/exit Consistent single puncture Consistent from edge Purposely avoided conduction system
Additional Comments:					
10. Suture advance along annulus	1 Uneven/irregular advance Irregular distance from previous bite Too small or too large	2	3 Mostly even advance Mostly consistent distance from previous bite Occasional small or large	4	5 Consistent even advance Consistent distance from previous bite Not too small or too large
Additional Comments:					
11. Seating of the prosthesis	1 Trauma to aorta No annular contact Loose/stray sutures Not identify "bag-etts"	2	3 Minimal trauma to aorta Mostly in contact Attempt to resolve stray sutures Understand "bag-etts"	4	5 No trauma to aorta Assure annular contact No stray sutures Identify "bag-etts"
Additional Comments:					

12. Knot-tying	1 Marked hesitancy, slow speed No follow through Not able to tie, breakage Loose or "air" knot	2	3 Moderate facility, moderate speed Intermittent follow through Able to tie and tension Concern about being loose	4	5 Consistent facility, no hesitancy Consistent follow through Consistent tension and tight
Additional Comments: _____					
13. Hand mechanics	1 No pronation or supination Awkward finger/hand motion No wrist motion Awkward /not coordinated use Non-dominant hand neglect	2	3 Incomplete pronation/supination Hesitant finger/hand motion Incomplete wrist motion Moderately coordinated use Moderate use of non-dominant hand to assist/expose	4	5 Able to modulate pronation/supination Smooth, comfortable motion Smooth, appropriate wrist motion Smooth, seamless coordination Full use of non- dominant hand to assist/expose
Additional Comments: _____					
14. Suture management/tension	1 Not use tension Sutures entangled Not use tension to assist exposure	2	3 Tension use inconsistent Sutures occasionally get in way Partial use of suture tension to expose	4	5 Proper use of tension Sutures consistently not in way Proper consistent use to expose
Additional Comments: _____					
15. Economy of time and motion	1 Marked hesitation Not aware of goals Unable to do task	2	3 Some hesitation Some awareness of goals Able to do task but discontinuous	4	5 No hesitation Fully aware of goals Able to do task smoothly
Additional Comments: _____					
Level of competence	1	2	3	4	5
Overall	Pass	Fail			

General Definitions:

- 5. Excellent, able to accomplish goal without hesitation, showing excellent progress and flow
- 4. Good, able to accomplish goal deliberately, with minimal hesitation, showing good progress and flow
- 3. Average, able to accomplish goal with hesitation, discontinuous progress and flow
- 2. Below average, able to partially accomplish goal with hesitation
- 1. Poor, unable to accomplish goal; marked hesitation

Assessment--Vessel Anastomosis

RESIDENT NAME _____ YR OF TRAINING _____ DATE _____

EVALUATOR _____ TIME TO COMPLETION _____

	Poor			Excellent	
	1	2		4	5
1. Arteriotomy	Not identify artery Off-midline Multiple "tracks" Injury to back wall Marked irregular edge		Partial artery exposure Mainly midline Thick single "track" Close to back wall Mild irregular edge		Full artery exposure Consistent midline Thin single "track" No injury to back wall Smooth edge

Additional Comments:

	1	2		4	5
2. Graft orientation	Unable to orient Not know start point Not know end point Marked hesitation		Orient with some hesitation Start with some hesitation Knows end point with Some hesitation		Proper heel-toe orientation Consistent start Knows end point No hesitation

Additional Comments:

	1	2		4	5
3. Bite	Irregular entry/exit Hesitant, multiple punctures Inconsistent distance from edge		Mostly regular entry/exit Mostly single puncture Mostly consistent from edge		Consistent regular entry/exit Consistent single puncture Consistent from edge

Additional Comments:

	1	2		4	5
4. Spacing	Uneven/irregular spacing Irregular distance from previous bite		Mostly even spacing Mostly consistent distance from previous bite		Consistent even spacing Consistent distance from previous bite

Additional Comments:

	1	2		4	5
5. Needle holder use	Awkward finger placement Unable to rotate instrument Awkward and not facile Inconsistent needle placement		Functional finger placement Hesitant when rotating Moderate facility Generally good placement		Comfortable, smooth finger placement Smooth rotation High facility Consistent proper placement

Additional Comments:

	1	2		4	5
6. Use of forceps	Awkward or no traction Unable to expose Not use to stabilize needle		Moderate proper traction Able to assist in exposure Able to stabilize but rough		Consistent proper traction Consistent proper exposure Knows when to stabilize, gentle

Additional Comments:

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7. Needle angles	1 Not aware of angles Not compensate for depth Does not consider subsequent angles	2	3 Understand angles, not consistent Partial compensation for depth Partial consideration of subsequent angles	4	5 Consistent correct angles Compensate for depth Consistent adjustment for subsequent angles
Additional Comments:					
8. Needle transfer	1 Marked hesitation in mounting needle	2	3 Able to mount needle with hand and partial manipulation	4	5 Able to mount needle and manipulate needle easily
Additional Comments:					
9. Suture management	1 Not use tension Suture entangled	2	3 Tension use inconsistent Sutures occasionally get in way	4	5 Proper use of tension Suture consistently not in way
Additional Comments:					
10. Knot tying	1 Marked hesitancy, slow speed No follow through Not able to tie, breakage Loose or "air" knot	2	3 Moderate facility, moderate speed intermittent follow through Able to tie and tension, intermittently loose	4	5 Consistent facility, no hesitancy Consistent follow through Consistent tension and tight
Additional Comments:					
11. Hand Mechanics	1 No pronation or supination Awkward finger/hand motion No wrist motion	2	3 Incomplete pronation or supination Hesitant finger/hand motion Incomplete wrist motion	4	5 Able to modulate pronation/supination Smooth, comfortable motion Smooth, appropriate wrist motion
Additional Comments:					
12. Use of both hands	1 Awkward /not coordinated use Non-dominant hand neglect	2	3 Moderately coordinated use Moderate use of non-dominant hand to assist/expose	4	5 Smooth, seamless coordination Full use of non- dominant hand to assist/expose
Additional Comments:					
13. Economy of time and motion	1 Marked hesitation Not aware of goal Unable to do task	2	3 Some hesitation Some awareness of goal Able to do task but discontinuous	4	5 No hesitation Fully aware of goal Able to do task smoothly
Additional Comments:					
Overall	Pass	Fail			

General Definitions:

5. Excellent, able to accomplish goal without hesitation, showing excellent progress and flow
4. Good, able to accomplish goal deliberately, with minimal hesitation, showing good progress and flow
3. Average, able to accomplish goal with hesitation, with minor progress
2. Below average, able to partially accomplish goal with hesitation
1. Poor, unable to accomplish goal; marked hesitation

Assessment--Lobectomy

RESIDENT NAME _____ YR OF TRAINING _____ DATE _____

EVALUATOR _____ TIME TO COMPLETION _____

	Poor 1	2	3	4	Excellent 5
1. Anatomy	Unable to correctly identify structures and their relationships		Completes lobectomy with some missteps		Consistently able to identify structures, correct lobectomy
Additional Comments: _____					
2. Retraction	Poor exposure, lung injury		Limited exposure, multiple adjustments		Good exposure, adjusts appropriately to maximize angles
Additional Comments: _____					
3. Vascular dissection	Vascular injury, incorrect identification		Occasional excessive or inadequate force		Correct plane, no tension
Additional Comments: _____					
4. Stapler use	Unsure how to use, uncontrolled		Appropriate use, maneuvering difficulty		Efficient and correct use
Additional Comments: _____					
5. Vascular ligation	Vessel injury, inadequate ligation		Excess tension during ligation		Correct knot tying technique
Additional Comments: _____					
6. Airway dissection	Airway injury, incorrect identification		Occasional excessive or inadequate force		Correct plane, airway identification
Additional Comments: _____					
7. Tissue respect	Unnecessary force, frequent tissue damage		Occasional damage		Consistent appropriate handling, minimal damage
Additional Comments: _____					

8. Instrument handling	1	2	3	4	5
	Tentative or awkward Poor instrument choice		Occasionally stiff or awkward Occasional incorrect instrument		Fluid instrument use Correct instrument for task
Additional Comments:					

9. Use of Both Hands	1	2	3	4	5
	Dominant hand only		Sometimes adjusts tension/retraction with other hand		Continually adjusts both hands appropriately
Additional Comments:					

10. Flow of operation	1	2	3	4	5
	Frequent stopping Deliberation prior to move		Steady progress		Pre-planned Effortless flow
Additional Comments:					

11. Economy of time and motion	1	2	3	4	5
	Many unnecessary moves		Some unnecessary moves		Maximum efficiency
Additional Comments:					

Overall PASS FAIL

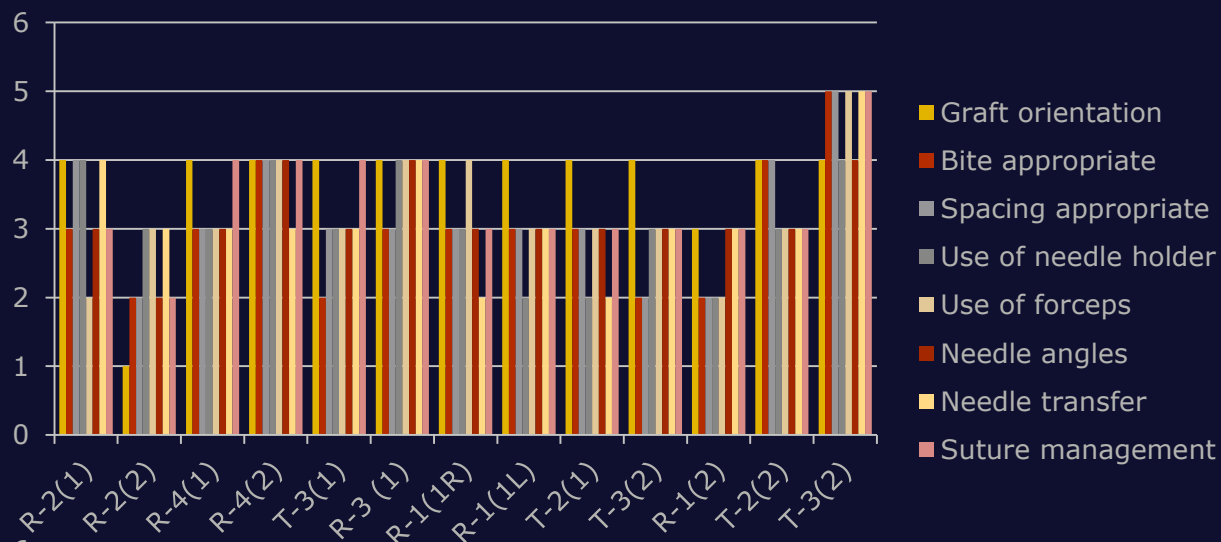
Bronchoscopy

RESIDENT NAME _____ YR OF TRAINING _____ DATE _____
 EVALUATOR _____

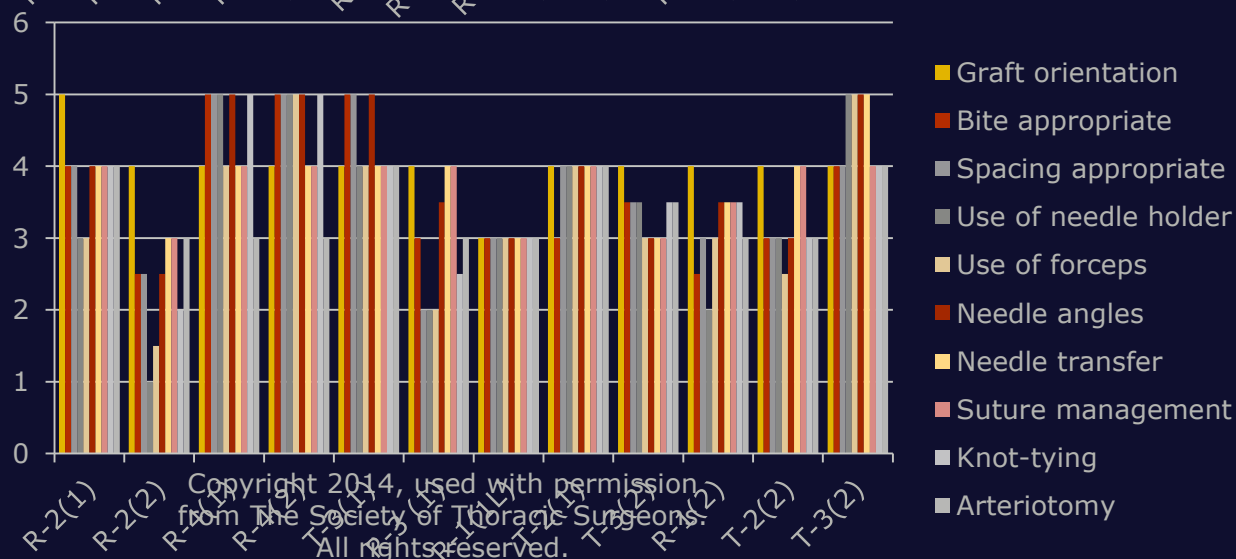
Step	Satisfactory		Comments
Instrument check (rigid bronchoscope)	Y	N	
Check light source	Y	N	
Check side port for ventilation	Y	N	
Lubricate scope, keep optics clear	Y	N	
Position patient, protect teeth throughout procedure	Y	N	
Intubate posterior pharynx	Y	N	
Navigate posterior pharynx, visualize cords	Y	N	
Intubate cords with minimal trauma	Y	N	
Visualize and identify trachea and lobar bronchi	Y	N	
Navigate with minimal airway trauma	Y	N	
Safe withdrawal of bronchoscope	Y	N	
Economy of time and motion	1 1= many unnecessary/ disorganized movements	2 3 3=organized time/motion, some unnecessary movement	4 5 5=maximum economy of movement and efficiency
Final rating (circle one)	Demonstrates competence		Needs further practice
Additional comments:			

RESIDENT PERFORMANCE—VESSEL ANASTOMOSIS ASSESSMENT

HeartCase



Porcine Heart



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