Milestones Implementation
UT Health Science Center- San Antonio

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Thoracic Surgery Program Director
The milestones are not intended to be evaluation tools in which the faculty express their opinions, but rather to be objectives for the resident to achieve.

Competency Based Education

THE MILESTONES NEED TO BE USED AS EVALUATION TOOL ENGAGING THE RESIDENTS IN THEIR OWN EDUCATION
Milestones list knowledge and skills the resident is expected to achieve

- Resident guidance
- Program structure
- Residency Program Review
Residency Program Responsibility

Define evidence by which the milestones are achieved / competency demonstrated.
Resident Responsibility

Understand requirements

Be an active participant in meeting each milestone
Reporting Responsibility

• Submit levels to the ACGME for EACH resident twice annually

• Be prepared to provide evidence
<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows basic anatomy and pathology (identifies coronary anatomy on angiogram)</td>
<td>Understands common variations in anatomy and pathology (e.g., left dominant system)</td>
<td>Understands complex integrations between anatomy and pathology (e.g., anomalous coronary artery)</td>
<td>Understands complex variations in anatomy and pathology, including congenital (e.g., able to identify coronary anatomy in reoperative surgery)</td>
<td>Understands implications of SYNTAX score</td>
</tr>
<tr>
<td>Knows basic cellular and vascular physiology</td>
<td>Understands physiologic changes accompanying ischemic heart disease (e.g., ischemia, ischemia reperfusion injury, infarction, recovering myocardium)</td>
<td>Understands the role of treatment on physiology of ischemic heart disease</td>
<td>Adapts therapeutic management based on understanding of physiology of complications of ischemic heart disease (e.g., post infarct VSD, ischemic mitral regurgitation)</td>
<td>Presents on outcomes of ischemic heart disease at local, regional or national meeting</td>
</tr>
<tr>
<td>Lists clinical manifestations of ischemic heart disease (e.g., angina, myocardial infarction)</td>
<td>Generates differential diagnosis of disease with similar manifestations (e.g., esophageal and aortic problems, pleurisy)</td>
<td>Identifies the common variants of the clinical manifestations of ischemic heart disease (e.g., unstable angina, acute myocardial infarction, silent ischemia)</td>
<td>Distinguishes the complex clinical manifestations and complications of ischemic heart disease</td>
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<tr>
<td>Lists diagnostic tools available for evaluation of ischemic heart disease</td>
<td>Understands advantages and disadvantages of diagnostic tools in evaluating ischemic heart disease (e.g., EKG vs. echocardiogram vs. angiogram)</td>
<td>Interprets normal and common abnormalities associated with ischemic heart disease (e.g., reads coronary angiogram, complex EKG)</td>
<td>Interprets and integrates complex abnormalities associated with ischemic heart disease</td>
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<tr>
<td>Lists treatment options for ischemic heart disease (e.g., CABG, PCI)</td>
<td>Knows basic complications for ischemic heart disease</td>
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Breaking the big task into smaller ones

• Knowledge milestones
  – Adult Cardiac, Thoracic, Congenital, Critical Care

• Skills Milestones
  – Adult Cardiac, Thoracic, Critical Care

• “Core Competencies”
  – Professionalism, Interpersonal and Communication skills, Systems Based Practice, Practice Based Learning
Knowledge Milestones

• Identify Didactic Content
  – Thoracic Surgery Curriculum (mostly)

• Document Resident Participation
  – Attendance

• Assess Resident’s Understanding
  – Quizzes / Clinical Scenarios
# Sample Knowledge Milestone Assessment Form

## Medical Knowledge: Ischemic Heart Disease

<table>
<thead>
<tr>
<th>MILESTONE Level 1</th>
<th>Date</th>
<th>Faculty</th>
<th>Assessment Method</th>
<th>MILESTONE Level 2</th>
<th>Date</th>
<th>Faculty</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows basic anatomy and pathology (identifies coronary anatomy on angiogram) CV01</td>
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<td></td>
<td></td>
<td>Understands common variations in anatomy and pathology (e.g., left dominant system) CV01, CV02</td>
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<tr>
<td>Knows basic cellular and vascular physiology CV01</td>
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<td></td>
<td>Understands physiologic changes accompanying ischemic heart disease (e.g., ischemia, ischemia reperfusion injury, infarction, recovering myocardium) CV07</td>
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<tr>
<td>Lists clinical manifestations of ischemic heart disease (e.g., angina, myocardial infarction) CV07</td>
<td></td>
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<td>Generates differential diagnosis of disease with similar manifestations (e.g., esophageal and aortic problems, pleurisy) CV07</td>
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</tr>
<tr>
<td>Lists diagnostic tools available for evaluation of ischemic heart disease CV07</td>
<td></td>
<td></td>
<td></td>
<td>Understands advantages and disadvantages of diagnostic tools in evaluating ischemic heart disease (e.g., EKG vs. echocardiogram vs. angiogram) CV07</td>
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<tr>
<td>Lists treatment options for ischemic heart disease (e.g., CABG, PCI) CV08, CV09</td>
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<td></td>
<td>Understands advantages and disadvantages of various treatment options for ischemic heart disease CV08</td>
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</tbody>
</table>
Patient Care and Technical Skills Milestones

• Identify Relevant Assessment/ Environment
  – Didactic, Clinic, Simulation, OR, Hospital
  – ? New / specific rotation

• Engage Resident Participation
  – Seek experience

• Involve faculty in regular reviews
  – 1:1 Milestones review
  – Consensus evaluation
## Sample Patient Care Technical Skills

### Patient care/ Technical Skills: Ischemic Heart Disease

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</table>
| Orders basic diagnostic and preoperative assessment tests for ischemic heart disease (e.g., cardiac cath, stress test)  
**CV03, observation** |      |     |                   | Interprets and prioritizes diagnostic and physiologic assessment tests for routine patient with ischemic heart disease  
Clinic/ Hospital observation |      |     |                   |
| Lists basic treatment options for routine ischemic heart disease (e.g, medical management, PCI vs. CABG)  
**CV04** |      |     |                   | Recognizes routine post-operative complications (e.g., CVA, shock, tamponade, interprets abnormal EKG)  
Hospital observation |      |     |                   |
| Demonstrates basic surgical skills (simulation vs. OR)  
**Sim lab/ OR observation** |      |     |                   | Suggests treatment plan for patient with routine ischemic heart disease  
Clinic/ Hospital observation |      |     |                   |
Core Competency

• Professionalism
  • 360° reviews
  • Faculty Consensus

• Interpersonal and communication skills
  • 360° reviews

• Systems Based Practice
  • Engage residents in patient safety projects
  • Group Discussions Resource Allocation
  • Business / Practice management curriculum

• Practice Based Learning
  • Coding, compliance, billing
  • M&M conferences, Quality Improvement projects
  • 360° reviews- student, junior residents
Summarizing and Reporting Levels

• Math (# bullets achieved / # available) X 5
  Medical Knowledge: Ischemic Heart Disease
  25 Bullets
  If 10 are achieved level is 2

• Clinical Competency Committee reviews each Resident’s Assessment form, agrees (or not), does the math
Each Resident / Each Milestone Level
Entered Directly to the ACGME website