



ACC.16™

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# Mapping Tools for Milestones Reporting

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AT THE  
INTERSECTION  
OF SCIENCE  
& CHANGE

#ACC16

# Objectives

- Review the **basic concepts** of competency based education
- Identify **challenges** that limit ability of programs to adapt evaluation methods to the reporting milestones
- Discuss **tools** developed by the ACCF to facilitate integration of curricular and reporting milestones



# **Question 1: What is your current role in the training program at your institution?**

- A. Program Director or Associate PD**
- B. Program Coordinator/Administrator**
- C. Faculty**
- D. Trainee**
- E. Not applicable**



Poll: Question 1: What is your current role in the training program at your institution?



# Competency Based Medical Education (CBME)

An **outcomes based approach** to the design, implementation, assessment and evaluation of medical education programs, **using an organizational framework of competencies**

*Frank JR et al. Medical Teacher 2010; 32 (8); 638-45*



# The Six Core Competencies



\*Adapted from the "Core Competencies for Interprofessional Collaboration"



# The Outcome Project

## 1999 - Outcome Project Begins

- General Competencies Defined
- Increasing emphasis on educational outcomes (vs. process)
- Educate physicians that can practice independently

## 2002-2008 – Implementation of 6 Core Competencies

- Residency programs expected to develop instructional and assessment methods for integrating the competencies in their curricula

## 2013 - Reporting Milestones

- Programs had difficulty measuring outcomes
- Assessment tools never fully developed
- Milestones created to more accurately evaluate residency education



# What are Milestones?

- ACGME Definition: Specific **behaviors, attributes, or outcomes** in the six general competency domains to be demonstrated by residents during training
  - Describes a trajectory of progress from beginner to independent practice
  - Articulates expectations at each level of learning
  - Sets aspirational goals of excellence
  - Aids in identification of skills in need of remediation





# Milestones

- **ACGME Subspecialty Reporting Milestones documents**
- **ACCF Curricular Competency and Milestones documents**



# Subspecialty Reporting Milestones

- 23 items developed around the 6 core general competencies
  - Patient Care and Procedure Skills (5)
  - Medical Knowledge (3)
  - System Based Practice (4)
  - Practice Based Learning and Improvement (4)
  - Professionalism (4)
  - Interpersonal and Communication Skills (3)



# Subspecialty Reporting Milestones

- Use in semi-annual review of fellow performance and reporting to ACGME
- Track the development of competence from an early subspecialty learner up to that expected for unsupervised practice (and beyond- **‘ASPIRATIONAL’** )
- Not specific to cardiovascular medicine



# Curricular Milestones

- **Specific components of competency within cardiovascular medicine**
- **All curricular milestones are now contained in COCATS 4 documents**
- **Each Task Force includes a table delineating the competency domains and associated curricular milestones**
- **ACC 2015 Core Cardiovascular Training Statement (COCATS 4) (Revision of COCATS 3): A Report of the ACC Competency Management Committee. *J Am Coll Cardiol* 2015;16:1724.**



# Example of Curricular Milestones for Ambulatory Cardiovascular Care

**TABLE 1**

**Core Competency Components and Curricular Milestones for Training in Ambulatory, Consultative, and Longitudinal Cardiovascular Care**

Competency Component		Milestones (Months)			
MEDICAL KNOWLEDGE		12	24	36	Add
1	Know the major cardiovascular risk stratification tools and the principles of primary and secondary cardiovascular disease prevention.	I			
2	Know the roles of genetics, family history, and the environmental and lifestyle factors in the development and clinical course of cardiovascular disease.		I		
3	Know the effects of age on cardiovascular function, on response to medications, and in the risks of diagnostic and therapeutic procedures.		I		
4	Know the differential diagnosis of chest pain and the distinguishing features of the various etiologies.	I			

## Question 2: What is the most important challenge in completing the reporting milestones?

- A. Time intensive
- B. Not aligned with trainee rotations
- C. Not aligned with evaluations/resources
- D. Faculty are not well educated
- E. Fellows are not well familiarized
- F. All of the above

Poll: Question 2: What is the most important challenge in completing the reporting milestones?



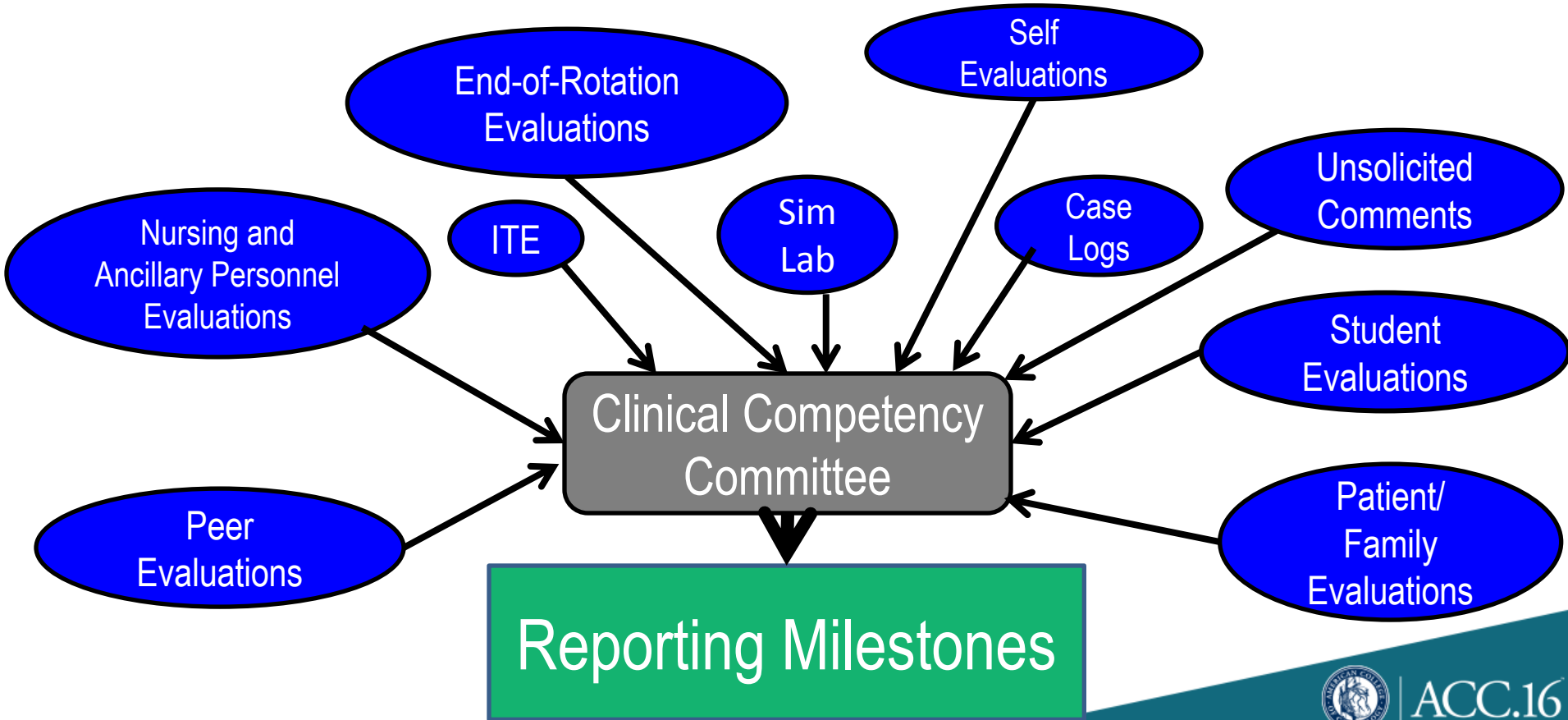
# How Do We Assess Reporting Milestone Levels?

- **Reporting milestones are not assessment tools to be used for gathering detailed information**
- **Curricular milestones were not intended to be a “check list” for programs to use to assess trainees**
- **Each program will need “data collection tools”**
- **Multiple sources**





# Assessment of Competency



# Entrustable Professional Activities

## EPA

*Professional activities that together constitute the critical elements that operationally define a profession*

- Complex professional behaviors
- Encompass multiple activities
- Estimates level of supervision needed

1 Full Supervision	2 Moderate Supervision	3 Minimal Supervision	4 Act Independently	5 Act as Supervisor
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# ECHO EPAs

## Transthoracic Echocardiography - After direct observation, I trust this resident to:

**1** Understand the basic principles of ultrasound physics and instrumentation necessary to obtain and optimize image acquisition

only with complete supervision	with partial supervision	with minimal supervision	independently	supervise/instruct
1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**MK2**

**2** Recognize and correctly characterize normal cardiac structure and function

only with complete supervision	with partial supervision	with minimal supervision	independently	supervise/instruct
1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**MK2, PC5**

**7** Communicate results to ordering providers and patients in a timely and professional manner

only with complete supervision	with partial supervision	with minimal supervision	independently	supervise/instruct	N/A
1	2	3	4	5	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

**ICS1, ICS2, PRO1**

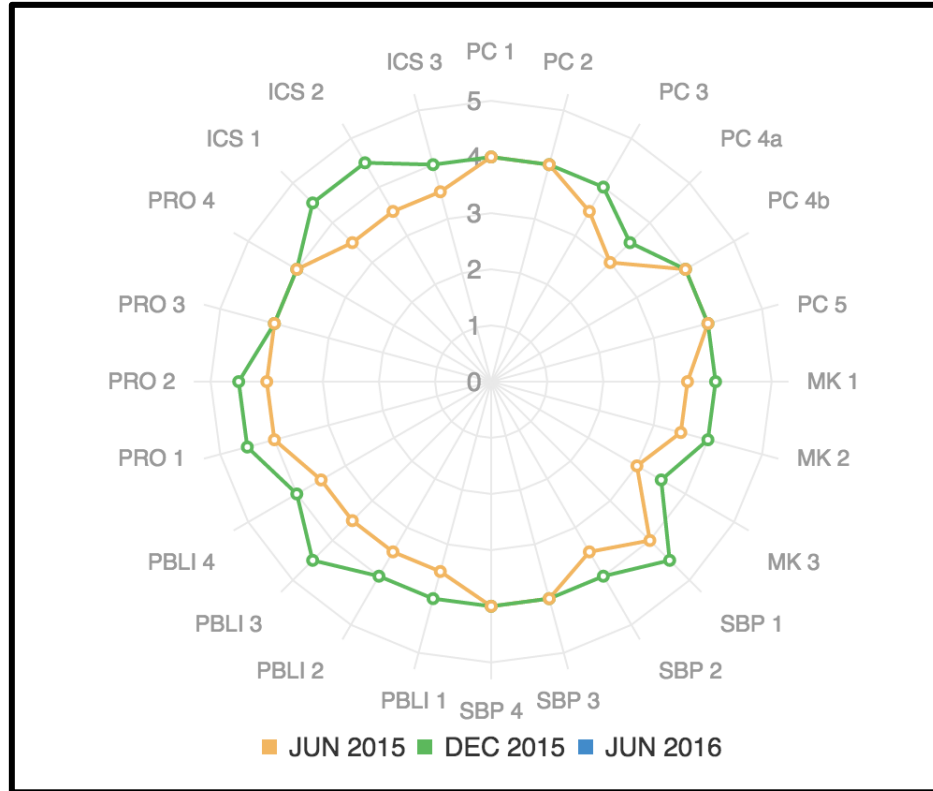
**8** Work with sonographers, nurses and support staff to provide efficient and safe patient care

only with complete supervision	with partial supervision	with minimal supervision	independently	supervise/instruct
1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**SBP1**



# Spider Web Plot



# Challenges

- **Adaptation** of the curricular competencies (now contained in COCATS 4 competency table) to **various rotations**
  - Example: Consult Service: Knowledge, patient care and skills from multiple core areas
- Clear documentation needed for **‘Critical Deficiencies’** and **‘Aspirational’ (both for faculty as well as fellows)**
- **Includes components that are difficult to assess-** work within inter-professional teams, system error detection and system improvement, cost-effective care, transitions of care, self performance audit



# The Ideal Evaluation Tool

- Mapped to curricular milestones (COCATS4 tables)
- Relevant and realistic to actual rotation experience
- Containing clearly stated narratives of progression from novice (critical deficiencies) to aspirational
- Modeled after the Reporting Milestone format
- Easy to use by faculty and easy to understand by faculty & fellows
- Compatible with the institution's residency management platform



# ACC's Mapping Tool Overview

- Rotation specific template evaluation tools
  - ACGME reporting milestones mapped to ACC curricular milestones
  - Organized by 6 core competency domains
- Evaluation tools are not comprehensive
  - Each program is encouraged to adapt templates to the needs of their institution and curriculum
- Faculty development is necessary to educate on milestones, evaluation tools, and methods to assess learners



# ACC Competency & Milestones Mapping Workgroup

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- James McPherson MD, IM PD, Vanderbilt, TN
- Lisa Mendes MD, CV PD, Vanderbilt, TN
- C.A.Sivaram MD, CV PD, University of Oklahoma, OK
- ACC Staff: Dawn Phoubandith, Robyn Snyder





# Mapping Tools

- |                            |                            |
|----------------------------|----------------------------|
| 1. Ambulatory Clinics      | 8. Vascular Medicine       |
| 2. Cardiology Consultation | 9. CCT/CMR                 |
| 3. CV Intensive Care Unit  | 10. ECG and Stress testing |
| 4. CVD Prevention          | 11. EP and Pacing          |
| 5. Cath Lab                | 12. Nuclear Cardiology     |
| 6. Echocardiography        | 13. Research               |
| 7. Heart Failure           | 14. Simple ACHD            |

[www.acc.org/membership/sections-and-councils/cardiology-training-and-workforce-committee/resources/acc-mapping-tools-for-milestone-reporting](http://www.acc.org/membership/sections-and-councils/cardiology-training-and-workforce-committee/resources/acc-mapping-tools-for-milestone-reporting)



# Ambulatory Clinic Mapping Tool

## Levels of Entrustment

### Patient Care and Procedural Skills

#### Reporting Milestones Subcompetency

**PC1:** Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s). **PC3:** Manages patients with progressive responsibility and independence.

#### Link to COCATS 4 Curricular Milestones

**M-AMB-PC1, PC2, PC3, PC4, PC5, PC8, PC10, PC11**

Level 1	Level 2	Level 3	Level 4	Level 5
	First year fellow	Second year fellow	Third year fellow <i>Ready for</i>	
<b>Critical Deficiencies</b>	<b>Early Learner</b>	<b>Advancing-Improving</b>	<b>Unsupervised Practice</b>	<b>Aspirational</b>
Fails to recognize the signs and symptoms of common cardiovascular diseases. Performs inadequate examination and assessment. Fails to develop comprehensive, evidence-based treatment plans. Provides inadequate follow-up to patients.	Possesses partial skills to conduct effective patient assessment. Is inattentive to patient safety and comfort. Develops incomplete treatment plans and provides treatment that is not consistent with guideline-directed medical therapy.	Can safely perform clinical assessments and interpret uncomplicated data in common cardiovascular disorders. Recognizes most high-risk findings in all clinical settings and is able to manage complications of common cardiovascular disorders.	Consistently and effectively performs clinical assessments and interprets diagnostic tests to develop guideline-directed medical therapy in common cardiovascular disorders. Consistently recognizes appropriate indications of testing and therapy and individual patient risks. Is able to assess and manage complications of common cardiovascular disorders and their therapies.	Demonstrates skills necessary to interpret, teach, and supervise others in the evaluation and management of a variety of cardiovascular disorders including uncommon conditions. Diagnoses and manages rare diagnoses.



# Ambulatory Clinic Mapping Tool

## Patient Care Example

ACC CMC Template Evaluation Tool for Ambulatory Clinics Rotation			
No.	Competency Area	Reporting Milestones Subcompetency	Link to COCATS 4 Curricular Milestones
2	Patient Care and Procedural Skills	PC1: Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s). PC3: Manages patients with progressive responsibility and independence.	M-AMB-PC1, PC2, PC3, PC4, PC5, PC8, PC10, PC11

## COCATS 4 Competencies

M-AMB-PC1	Skill to effectively and efficiently perform an initial outpatient cardiovascular consultation, and establish a differential diagnosis.
M-AMB-PC2	Skill to appropriately utilize diagnostic testing – both for initial diagnosis and for follow-up care.
M-AMB-PC3	Skill to integrate clinical and testing results to establish diagnosis, assess cardiovascular risk, and formulate treatment and follow-up plans.
M-AMB-PC4	Skill to appropriately obtain and integrate consultations from other healthcare professionals in a timely manner.
M-AMB-PC5	Skill to recognize a acute cardiovascular disorders or high-risk states that require immediate treatment and/or hospitalization, and prioritize management steps in patients with complex or multi-component illness.
M-AMB-PC8	Skill to effectively carry out chronic disease management in patients with chronic ischemic heart disease, hypertension, heart failure, and peripheral vascular disease.
M-AMB-PC10	Skill to effectively facilitate transition of care from hospital to ambulatory or intermediate care settings.
M-AMB-PC11	Skill to perform preoperative assessments for noncardiac procedures in patients with cardiovascular disease.

**Question 3: Are you using the ACC Mapping tools (unmodified or modified-program specific fashion) to assist in data collection for reporting milestones?**

A. Yes

B. No



Poll: Question 3: Are you using the ACC Mapping tools (unmodified or modified-program specific fashion) to assist in data collection for reporting milestones?



## Question 4: What electronic reporting tool are you using for trainee evaluations?

- A. New Innovations
- B. MedHub
- C. GmeOne
- D. NextMed Technologies
- E. Verinform
- F. Other

Poll: Question 4: What electronic reporting tool are you using for trainee evaluations?



# Experience with ACC Milestones Mapping Tools

- University of Oklahoma CV fellowship has been using the Mapping Tools for evaluation of all rotations beginning July 2015
- Transition from previous evaluation forms to Mapping Tool based format has been smooth
- Faculty still require more education
- CCC operations more time efficient
- Please visit our poster [here](#)





# Wrap Up

- You may access the ACC CMC's Mapping Tools via CardioSource
  - <http://www.cardiosource.org/ACC/ACC-Membership/Sections-Segments-Councils/Training-Directors.aspx>



# Future Directions

- Create ways of sharing Milestones Mapping Tool evaluations across various residency evaluation platforms (MedHub already completed)
- Uniform evaluation tools across CV fellowship training programs, to compare-trend-track training outcomes



- Thank you
- Thanks to ACC Staff- Dawn Phoubandith & Robyn Snyder

