

# Facilitator's Guide

## Developing a Competency-based Curriculum

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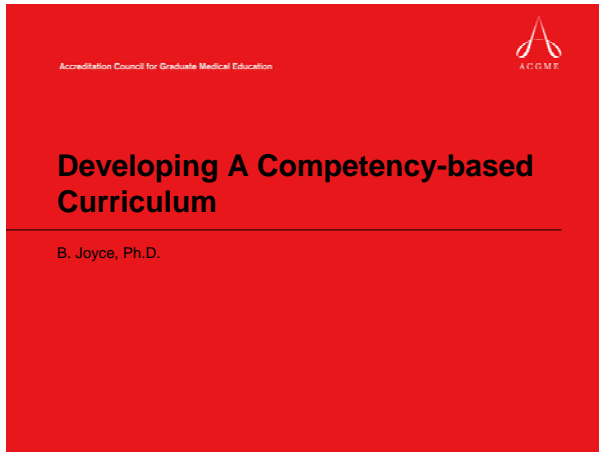
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## Slide 1



### Speaker Notes

In “Practical Implementation of the Competencies,” you outlined where your program is teaching the competencies, and what additional educational experiences you might like to add. In addition, in “Developing an Assessment System,” you completed a grid that reflected the assessment methods used in your program. Identification of where you are teaching the competencies and how you are assessing them is foundational knowledge for beginning to develop a curriculum.

Please identify one rotation or educational experience for which you wish to write a competency-based curriculum. This module will take you step by step through a process of creating a competency-based curriculum document that can serve as a template for further curricular revision of your program.

Before beginning the module:

1. identify a specific rotation or educational experience for which you would like to write a competency-based curriculum plan;
2. review curriculum that your specialty society or program director organization has written;
3. print a copy of your specialty-specific Program Requirements, which can be accessed at [http://www.acgme.org/acWebsite/navPages/nav\\_comRRC.asp](http://www.acgme.org/acWebsite/navPages/nav_comRRC.asp) ;
4. review Appendix A *Curriculum Template*. ( **Download the template – it will expand as you type into it** ) ; and
5. review the resources for adding verbs to your objectives.

A.B. Rosof & W.C. Flech, MD (1992). List of Verbs for Formulating Educational Objectives. Retrieved 10/13/06 from Association of Academic Psychiatrists  
<http://www.psychiatry.org/education/Massagli/CD/Objectives%20verbs.doc>

Huitt, W. (2004). Bloom et al.'s taxonomy of the cognitive domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved [date], from <http://chiron.valdosta.edu/whuitt/col/cogsys/bloom.html>.  
<http://chiron.valdosta.edu/whuitt/col/cogsys/bloom.html> Accessed 10/13/06

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**Please note:** The curriculum outline proposed in this presentation will help you get started writing your curriculum document. This outline does not cover all the types of information required by each specialty RRC. **Check with your specialty program requirements to see if additional sections, such as patient characteristics or types of clinical encounters, are required in your curriculum document. Also, prior to writing your curriculum, check the ACGME website for updates to the Common Program Requirements.**

For a more in-depth discussion of curriculum development, please see:  
Kern, D.E., Thomas, P.A., Howard, D.M., Bass, E.B. *Curriculum Development for Medical Education*. Baltimore: Johns Hopkins University Press, 1998.

## **Discussion**

It is often helpful to have key faculty involved in designing a curriculum. One method to increase faculty involvement in this process is to assign a different rotation or educational experience to each faculty member, and then have him or her complete the template from this module. Faculty will also deepen their own understanding of the ACGME competencies and assessment measures.

## Slide 2



### Objectives

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- Develop a competency-based curriculum for a rotation or educational experience
- Develop goals and objectives for the rotation or educational experience
- Appreciate the importance of linking objectives with assessment methods

### Speaker Notes

These are the objectives for this PowerPoint presentation.

## Slide 3

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### Six Steps to Developing a Competency-based Curriculum

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1. Conduct needs assessment
2. Identify competencies addressed by this rotation or experience
3. Write goals and objectives
4. Determine teaching methods
5. Determine assessment methods
6. Determine program improvement methods

### Speaker Notes

Curriculum planning is useful in clearly outlining the educational experiences for the residents and faculty. A needs assessment helps to define what learners need to learn from a particular rotation or educational experience. The goals and objectives reflect the expected learning outcomes for the particular rotation or educational experience. It is important to align the objectives with content, teaching, and assessment methods. If the objective is to have residents perform a neurological exam, then teach the exam at the bedside and evaluate the resident's performance by direct observation. In this example, content, teaching methods, and assessment are aligned. Teaching methods, such as didactic conferences or clinical teaching, highlight how the information or skill is taught. Assessment methods, such as direct observation checklist or global clinical performance (end of rotation) ratings, inform the resident of how he or she is to be evaluated. Outlining program evaluation methods inform faculty and residents about how program improvement will occur. By reviewing a curriculum document at the beginning of a rotation, faculty, and residents will be clear about the learning objectives, methods of teaching, methods for assessing performance, and the methods by which the rotation will be evaluated and improved.

This PowerPoint presentation and curriculum template will help Program Directors and faculty develop a competency-based curriculum by following six steps:

1. Conduct needs assessment.
2. Identify competencies addressed by this rotation or experience.
3. Write goals and objectives.
4. Determine teaching methods.
5. Determine assessment methods.
6. Determine program improvement methods.

## Slide 4



### Needs Assessment

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- ❑ What learners need to learn
- ❑ Program requirements, board certification requirements and/or specialty society curricula determine much of the content residents need to learn on a particular rotation or educational experience.

### Speaker Notes

A needs analysis broadly identifies the knowledge, skills, or attitudes taught and learned during an educational experience, whereas a gap analysis further refines and identifies the knowledge, skills, or attitudes residents need to acquire. To conduct a needs analysis, information on specific knowledge, skills, or attitudes learners need to acquire may be gained from surveys, focus groups, literature reviews, or expert consensus panels. For residency programs, the needs analysis may consist of a review of specialty-specific curriculum, accreditation requirements, or program evaluation data. Then, a gap analysis is completed to determine the gap between what learners currently know and what additional knowledge or skills they need to learn. The gap analysis is a refinement of the needs analysis, and specifies the content of the curriculum change. Ideally, the gap and needs analysis define the desired outcomes of the educational experience (i.e., what you expect the learner to be able to do in real world practice).

#### Needs Analysis:

1. Review specialty-specific curriculum.
2. Review board certification requirements.
3. Review Common Program Requirements.
4. Review RRC Program Requirements.
5. Identify where in your program you are currently teaching the competencies and what you might like to improve (“Practical Implementation of the Competencies”).
6. Identify the assessment methods you are currently using in your program (“Developing an Assessment System”).
7. Review data from the evaluation of your residency program.

## Information to Review

Many of you have specialty-specific curricula, which determine the content of your rotations or educational experiences. These specialty-specific curricula can be used as reference tools to inform the development of your instruction, although it is important for individual programs to develop their own curricula that reflect the institutional and program philosophy of resident education. Reviewing your specialty-specific curricula is part of your needs assessment.

Reviewing board certification requirements assures the residents that they will be eligible to sit for their specialty boards upon graduation. A gap between the board certification requirements and your current program will identify topics that need to be added to your program.

The Common Program Requirements outline the required objectives for each of the competencies, and are a useful tool to determine objectives for the competencies in your program. The gap between the Common Program Requirements and your current curriculum for the competencies becomes part of the gap analysis. **Please note: The Common Program Requirements are in the process of being updated. Be sure to check the website for the latest version.**

RRC Program Requirements also drive the types of content and experiences of your residency program. Review the RRC Program Requirements, and determine your program's compliance with those requirements. The gap between the RRC Program Requirements and your current curriculum becomes part of your gap analysis. The Program Requirements provide information about the broad categories of the curriculum, but the development of a specific curriculum is left to the individual program. Perform a quick gap analysis to determine what portions of your curriculum meet specialty-specific or accreditation requirements, and what portions of your curriculum might need to be improved

Reviewing where in your curriculum you currently teach the competencies and how you currently assess the competencies will also provide information for your gap analysis. Do you need to add topics to more effectively teach the competencies? Do you need to add additional assessment tools? Can you look outside your program for teaching expertise and educational aids?

Some programs may review program evaluation data, gathered from residents and faculty, to determine what changes are needed in specific rotations or educational experiences. These program evaluation data are part of your needs analysis.

The step-by-step process described in this presentation will help you develop a competency-based curriculum, and determine assessment methods, teaching strategies, and program improvement methods.

## Slide 5

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### Rotation Description

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- Write a description of the rotation
  - Gives residents an overview of what to expect

### Speaker Notes

#### **Directions for completing the template**

Begin your curriculum by writing a short description of the rotation or educational experience. This description should broadly describe the rotation or educational experience to help orient residents to the educational experience.

## Slide 6



### Goals and Objectives

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- Provide an instructional roadmap
- Provide clarity about the educational program to external stakeholders
- Encourage higher order learning
- Determine the assessment method

### Speaker Notes

Once you have identified which competencies are being taught on a specific rotation or educational experience, you can begin to write goals and objectives. Goals and objectives provide an instructional road map, and bring clarity about the educational experience or rotation to residents, faculty, and external stakeholders. Think about driving in an unknown city. Some individuals, who are unfamiliar with the city, may feel they don't need a map. These individuals may end up driving around for a much longer time or getting lost many times before reaching their destination. Other individuals, who follow a map, reach their destination quickly and in less time because they are clear about the direction they need to drive in. The same holds true for education. Goals and objectives help to clarify the content and outcomes for the learning experience. They provide the roadmap to make sure residents learn what they need to know.

Goals and objectives are not a rigid prescription reflecting the content of what is to be taught or learned; they do provide learners and teachers with a guide or roadmap to make sure the necessary content is taught, and that learners understand expectations. Goals and objectives also provide clarity about the educational program to accrediting bodies.

Objectives can encourage higher order learning, particularly when verbs, such as synthesize, analyze, appraise, critique, are used. These verbs encourage the learner to go beyond rote memorization and apply the information in more cognitively complex ways.

Objectives determine the assessment methods. Residents, for example, are expected to develop skills and habits to be able to locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems. To assess this objective, the assessment method needs to reflect a resident's ability to locate, appraise, and assimilate research studies and apply them to patient care. Many assessment methods could be used. For example, residents might present a Journal Club article that reflects the above skills; or they might present a patient case that reflects their ability to do a literature search, integrate the findings with patient care, and comment on the scientific studies.

## Slide 7



### Goals

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- ❑ A statement that describes what the learner will gain from the instruction
- ❑ Think of goals as broad overarching statements
- ❑ Goals are not necessarily measurable

### Speaker Notes

Educational goals are broad statements describing what the learner will gain from the instruction. Goals are not necessarily measurable.

#### **Example goals from the Outcome Project:**

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. (PBLI)

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. (SBP)

#### **Example rotational goals:**

During the Inpatient Medicine rotation, residents are expected to be able to demonstrate and apply an evidence-based medicine approach to patient care that reflects an integration of basic science and clinical knowledge. Residents are also expected to improve their communication skills with patients, patients' families, and colleagues.

Residents will gain an understanding of pulmonary diseases and the management of common pulmonary disorders encountered in primary care.

The statements are broad in scope and do not contain discrete behaviors that are measurable. When writing goals, think broadly (“the big picture”) about the educational expectations for the rotation or educational experience for which you are writing a curriculum.

**Directions for completing template:**

Using the “Curriculum Template” as a guide, record the rotational goals for the rotation or educational experience you are working on. The goals for each competency section are already inserted.

## Slide 8

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### Identify competencies

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- Medical Knowledge
  - Insert specialty specific competencies
- Patient Care
  - Insert specialty specific competencies

## Slide 9

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### Identify competencies (con't)

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- Systems Based Practice
  - Are any of the competencies of Systems Based Practice addressed on this rotation or experience?
- Practice Based Learning and Improvement
  - Are any of the competencies of PBLI addressed on this rotation or experience?

## Slide 10

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### Identify competencies (con't)

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- Professionalism
  - Are any of the competencies of Professionalism addressed during this rotation?
- Interpersonal and Communication Skills
  - Are any of the competencies of Interpersonal and Communication Skills addressed during this rotation?

## Speaker Notes (Slide 8, 9, 10)

The goals and objectives reflecting the knowledge, skills, and attitudes for Medical Knowledge and Patient Care are often found in specialty-specific curricula. Many programs have not identified specific goals and objectives for the other four competencies. For example, patient care activities, on an inpatient rotation, may address a number of competencies such as Medical Knowledge, Interpersonal and Communication Skills, Professionalism, Systems-based Practice, or Practice-based Learning and Improvement, as well as Patient Care. On most rotations, the six competencies should be part of the educational experience. If you are writing a curriculum for a specific educational experience, such as a simulation, not all of the competencies may be addressed.

These three slides reflect the questions that should be asked to clarify which competencies are being taught on a particular rotation or educational experience. Most programs have already established a set of goals and objectives addressing Medical Knowledge and Patient Care.

What you will need to do:

1. Review the questions on the slides for each competency and record how the competency is taught on that rotation or educational experience you have chosen. Although all the competencies may be addressed on each rotation, some rotations may lend themselves to a deeper exploration of Interpersonal and Communication Skills, while others may be more conducive to teaching PBLI.
  - Examples (ICS):
    1. During a Geriatrics rotation, residents may focus on developing and demonstrating communication skills with patients and their families through interviews in order to understand more deeply issues common to aging patients and their families, and to write a reflective narrative.
    2. On a Surgery rotation, residents may learn and be able to demonstrate communication skills with colleagues through learning a standardized method of hand-off.
    3. On a Radiology rotation, residents develop consultative skills with colleagues. Focused discussions might occur, during precepting or rounding, on the components of a consultative note, or how to handle conflict situations with colleagues.

- Examples (PBLI):
  1. Evidence-based medicine may be taught through Journal Club and reinforced during rounding and precepting on inpatient or outpatient rotations.
  2. On a particular rotation, residents may be required to present a case using principles of EBM.
  3. On particular rotations, senior residents may be responsible for demonstrating teaching skills through precepting medical students, conducting morning report, presenting didactic lectures.

**Directions for completing the template:**

Under each of the six competencies such as Practice-based Learning and Improvement or Interpersonal and Communication Skills, there is a list of competencies or skills that you might address on the rotation or educational experience. Review the list and pick one or two of these competencies that are relevant to the rotation or educational experience you are working on.

## Slide 11

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### Objectives

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- ❑ Contain a behaviorally explicit statement reflecting what a resident will learn
- ❑ Reflect the knowledge, skills and attitudes residents should acquire for each rotation and each level of the program

### Speaker Notes

Objectives, on the other hand, are behaviorally explicit statements reflecting the knowledge, skills, and attitudes residents should acquire on each rotation and at each post-graduate year (PGY) level.

## Slide 12



### Writing objectives

The (**specify year**) resident \_\_\_\_\_ (**will do- action verb**) \_\_\_\_\_  
(**what**) as measured by \_\_\_\_\_ (**type of assessment**)

Composed of four parts:

- Who
- Will do
- What
- Type of assessment

### Speaker Notes

Many Program Directors struggle with writing objectives. A simple way to write objectives for your program is to use the following statement, filling in the blanks:

The (**specify year**) resident \_\_\_\_\_ (**will do- action verb**) \_\_\_\_\_ (**what**) as measured by \_\_\_\_\_ (**type of assessment**).

#### Examples:

Second-year residents will locate, appraise, and assimilate evidence from scientific studies related to their patient's health problems, as measured by their ability to discuss pertinent research findings in their case presentations.

Third-year residents will incorporate considerations of cost effective practice into patient care, as measured by the global end of rotation evaluation tool.

First-year residents will demonstrate respect for patient privacy and autonomy, as measured by a global end-of-rotation tool.

First-year residents will demonstrate the ability to share bad news in a compassionate and respectful manner, as measured by performance on an OSCE.

## Slide 13

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### Types of Objectives

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There are three types of objectives:

- Knowledge
- Skills
- Attitude

### Speaker Notes

There are three types of objectives:

- *Knowledge objectives*, which reflect the information or knowledge the learner is to acquire.

Examples:

- First-year pediatric residents will summarize the indications for use of antidepressive medications in adolescents, and be able to evaluate risks and benefits, as measured by chart-stimulated recall.
  - First-year residents will be able to describe the pathophysiology, presentation, and treatment of shock, sepsis, and multisystem organ failure, as measured by chart-stimulated recall.
  - While on an Emergency Medicine rotation, second-year residents will be able to formulate a differential diagnosis for a patient with altered mental status (including consideration of infectious, vascular, metabolic, drug-related, and traumatic etiologies), and describe initial evaluation and treatment for each of these.
- *Skill objectives*, which reflect the skill sets residents, are to acquire. This may comprise skills sets in interpersonal and communication skills, procedural skills sets, or skill in conducting and reporting a QI/QA project.

Examples:

- First-year residents will demonstrate the ability to create and sustain a professionally therapeutic relationship that reflects cultural sensitivity across a broad spectrum of patients, as measured by a multi-station OSCE.
  - First-year residents will be able to successfully use available information technology to enhance life-long learning, as measured by end-of-rotation global evaluation tool.
  - During an OB/GYN rotation, second-year residents will demonstrate the ability to deliver a baby during an uncomplicated delivery.
  - Third-year residents will reflect on their own practice patterns, determine areas for improvement, and implement an educational improvement plan.
- *Attitude objectives*, which reflect the affective component of learning and the acquiring of values or attitudes.

Examples:

- From the patient's perspective, second-year residents will appreciate access-to-care issues within their system, as measured by a personal narrative.
- Throughout their residency, residents are expected to demonstrate respect, compassion, integrity, and responsiveness to patient care needs that supersedes self-interest as measured by a multi-rater (360) evaluation.

**Directions for completing the template:**

- Using the “Curriculum Template” as a resource, record on the template which competency objectives are covered on the rotation or educational experience you have chosen.
  1. Use the ACGME competencies on the template as a guide. You have already chosen those components of the competency that are taught on the rotation or educational experience you are currently working on. Write one or two objectives for each of the competencies and record on the template. Use one of the lists of verbs found on the websites listed earlier.

2. Some specialties have curricula that reflect the ACGME competency framework; others do not. If your specialty is one that does not, you will enter most of your specialty-specific predetermined goals and objectives under either Medical Knowledge or Patient Care.
3. Most programs will have many objectives for Medical Knowledge and Patient Care. Include objectives, where appropriate, for the other four competencies as well. Remember, this is a beginning; objectives are often refined over time and with comments from others.
4. Compare the objectives you have written with the ones your colleagues have written.

## Slide 14



### Key Points

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- ❑ Identify broad overarching goals
- ❑ Identify specific objectives (knowledge, skills or attitudes) the resident should learn
- ❑ Align assessment method with objective

### Speaker Notes

This is what the process looks like in a simplified form.

## Slide 15

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### Teaching Methods

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- Didactic conferences
- Clinical teaching
- Case based teaching
- Role modeling
- Journal Club
- Mentoring
- M & M
- Simulation
- Self directed learning modules
- Individual or group projects
- Research projects
- Chart audit

### Speaker Notes

The slide reflects examples of various kinds of teaching methods. You may have additional ones, which can be included under this section. If you have completed “Practical Implementation of the Competencies,” the teaching methods or settings you identified in that module can be inserted into this part of your curriculum.

#### **Directions for completing the template:**

Under the heading “Teaching Methods,” list and give a brief description of the various teaching methods used during your rotation or educational experience.

## Slide 16

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### Assessment Methods

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- Record the assessment methods you use to evaluate the resident's performance
- Remember to use multiple methods

### Speaker Notes

If you have completed “Developing an Assessment System,” you have identified those assessment methods used in your program. Identify which methods are used during the particular rotation or educational experience you are working with. List them and provide a brief description. Do you have minimum thresholds for performance? At what point does an evaluation trigger remediation?

#### **Directions for completing the template**

Record the assessment methods you are using to evaluate the resident on this rotation or educational experience. Remember to use multiple methods.

# Slide 17

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## Method for program Evaluation

- Identify how this rotation or educational experience is evaluated

## Speaker Notes

Program Evaluation is an important component of curriculum planning. Program Evaluation refers to using aggregate evaluation data to evaluate the efficacy of the program. This topic will be covered in more depth in a future PowerPoint presentation. Aggregate data you might use to evaluate a rotation or educational experience include:

- resident evaluations of the rotation;
- faculty evaluations of the rotation; and
- residents' attainment of the specific goals and objectives of the rotation or educational experience (i.e., the results of the residents' assessment for the rotation or education experience).

## Directions for completing the template

Record how the rotation or educational experience is evaluated.

## Slide 18

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### Supervision

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- How is the resident supervised during this rotation or educational experience?
  - Some educational experience may not be directly supervised

### Speaker Notes

#### Directions for completing the template

Record on the template how the resident is supervised on this rotation. Some educational experience may not have a direct supervision component.

## Slide 19

### Educational resources

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- ❑ List all educational resources
  - Books
  - Self directed learning modules
  - Slides
  - Videos
  - CD-ROMs

### Speaker Notes

Finally, on your curriculum template list all the educational resources residents are expected to review while on this rotation. The list above gives some examples of what to include.

#### **Directions for completing the template**

Completing a curriculum for a rotation or educational experience is a daunting task. If you have worked through this module, you have outlined the major components of your curriculum for a specific rotation. Congratulations!

**Please check with your specialty program requirements to see if additional sections, such as patient characteristics or types of clinical encounters are required in your curriculum document.**