

Writing GME Goals & Objectives A Toolkit

Rationale:

While the ACGME requires that all accredited programs maintain overarching goals and objectives for the program, as well as more specific goals and objectives for each rotation and educational experience in the program. This includes any research or quality improvement project requirement. Goals and objectives must be written in “competency language” and be broken down by each of the program’s PGY Level. Because the ACGME doesn’t specify that both the overarching program and the rotation-specific goals and objectives be broken down by PGY level, Program Directors have a couple of options when organizing their curriculum:

- 1) Include PGY Level breakdown in Program Goals & Objectives and develop rotation goals & objectives by competency only. This is a useful approach for programs that have significant variation in rotation experiences by PGY (e.g. certain rotations only have PGY3s on them)
- 2) Develop the PGY level-specific breakdown in the rotation-specific goals and objectives and leave the program goals and objectives organized by competency alone. This approach is best for programs in which residents rotate through the same inpatient/outpatient experience over the multiple years of training.

Note that the ACGME does require that the competencies be used in both program and rotation-specific goals and objectives.

Definitions:

Broad education **goals** communicate the overall purposes of a curriculum and serve as criteria against which the selection of various curricular components can be judged. The development and prioritization of specific measurable **objectives** permit further refinement of the curricular content and guide the selection of appropriate educational and evaluation methods.

There are several compelling reasons for taking the time to develop effective goals and objectives. They:

- Clearly communicate performance expectations of residents to learners, faculty, nurses and other staff
- Help direct the choice of curricular content and the assignment of relative priorities to various components of the curriculum
- Suggest what learning methods will be most effective
- Suggest what evaluation methods are appropriate
- Enable evaluation of learners and the curriculum, thus permitting demonstration of the effectiveness of a curriculum
- Clearly communicate to others (e.g., to learners; faculty; residency directors, department chairs, and others with administrative responsibility; and individuals from other institutions) what the curriculum addresses and hopes to achieve

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Types of Learner Objectives¹

Learner objectives included objectives that relate to learning in the **cognitive, affective,** and **psychomotor** domains.

Learner objectives that pertain to the **cognitive** domain of learning are often referred to as “**knowledge**” objectives. The latter terminology, however, may lead to an overemphasis on factual knowledge. Objectives related to the cognitive domain of learning should take into consideration a spectrum of cognitive functioning relevant to the goals of a curriculum, from simple factual knowledge to higher levels of cognitive functioning, such as problem solving and clinical decision making.

EXAMPLE: Cognitive Objective. By the end of the neurology curriculum, the learner will describe in writing a cost effective approach to the initial evaluation and management of patients with dementia (an approach that includes at least six of the eight elements listed on their handout).

Learner objectives that pertain to the **affective** domain are frequently referred to as “**attitudinal**” objectives. They may refer to specific attitudes, values, beliefs, biases, emotions, or role expectation that can affect learning or performance. Affective objectives are usually more difficult to express and measure than are cognitive objectives. Many people, therefore, are uncomfortable with writing affective objectives in explicit terms, even though affective objectives are implicit in most education programs for medical students, physicians, and other providers. To the extent that a curriculum involves learning in the affective domain, curriculum planners should develop objectives in this domain. Such objectives can help direct education strategies, even when there are insufficient resources to objectively assess their achievement.

EXAMPLE: Affective objective. By the end of the HIV curriculum, all residents will have identified their attitudes and beliefs regarding HIV patients who are drug addicts and will have discussed with their colleagues and attending physicians how these might influence their management of such patients.

Examples of Less – Well – Written and Better – Written Objective

Residents will learn the technique of joint injections.
(The Types of Injections to be learned are not specified. The types of residents are not specified. It is unclear whether cognitive understanding of the technique is sufficient or whether skills must be acquired. It is unclear by when the learning must have occurred and how proficiency could be assessed. The objective on the right addresses each of these concerns.)

By the end of their residency, each family practice resident will have demonstrated at least once (according to the attached protocol) The proper techniques of:
- subacromial, bicipital, and intra-articular shoulder injection;
-intra-articular knee aspiration and/or injection;
-injections for lateral and medial epicondylitis;
-aspiration and/or injection of at least one new bursa, joint, or tendinous area, using appropriate references and supervision.

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Learner objectives that relate to the **psychomotor** domain of learning are often referred to as “**skill**” or “**behavioral**” objectives. These objectives refer to specific psychomotor tasks or actions that may involve hand or body movements, vision, hearing, speech, or the sense of touch. History taking, patient education, interpersonal communication, physical examination, record keeping, and procedural skills fall into this domain. In writing objectives for relevant psychomotor skills, it is helpful to indicate whether learners are only expected to achieve the ability to perform a skill (a “skill” or “competence,” objective) or whether they are expected to incorporate the skill into their continuing behavior (a “behavioral,” or “performance,” objective). Whether a psychomotor skill is written as a competence or performance objective has important implications for the choice of evaluation strategies and may influence the choice of education methods as well.

EXAMPLE: Skill, or Competence, Objective. By the end of the curriculum, all medical students will have demonstrated proficiency if assessing alcohol use by utilizing all four of the CAGE questions with one simulated and one simulated and one real patient. (This skill, or competence, objective can be assessed by direct or videotaped observation by an instructor.)

EXAMPLE: Behavioral, or Performance, Objective. All students who have completed the curriculum will routinely (>80% of the time) use the CAGE questions to assess their patients alcohol use. (This behavioral, or performance, objective might be assessed by reviewing a random sample of student write-ups of the new patients whom they work up during their core medical clerkship.)

Knowledge of the various domains of learner objectives is valuable because it helps one to understand the complexity of learning related to any education goal and to choose objectives and educational strategies wisely.

Outcome Objectives

Outcome objectives relate to potential outcomes, or effects, of a curriculum, beyond those delineated in its learner and process objectives. Outcomes might include health outcomes of patients or career choices of physicians. More proximal outcomes might include changes in the behaviors of patient or physicians. Sometimes a curriculum planner may choose to classify certain psychomotor (behavioral, or performance) objectives for learners as outcome objectives.

EXAMPLE: Career outcome objective. Eighty percent or more of the graduates of our primary care residency programs will be pursuing careers in primary care five years after graduation.

EXAMPLE: Performance and Health Outcome Objectives. Physicians who have completed the two-session, continuing education course on basic interviewing skills will demonstrate, during audio taped doctor-patient encounters one to two months later, a significantly greater use of taught skills in their practice setting than control group physicians do. Their emotionally disturbed patients, as determined by General Health Questionnaire (GHQ) scores of 5 or more, will show significantly greater improvement in GHQ scores at two weeks, three months, and six months following the audio taped encounters than patients of control group physicians.

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¹From Kern, D.E. et al, Curriculum Development for Medical Education: A Six-Step Approach. Baltimore: Johns Hopkins University Press, 1998.

It is a bit unrealistic to expect medical curricula to have easily measurable effects on quality of care and patient outcomes. However, most medical curricula should be designed to have positive effects on quality of care and patient outcomes. Even if outcomes will be difficult or impossible to measure, the inclusion of some outcome objectives in a curriculum plan will emphasize the ultimate aims of the curriculum and may influence the choice of curricular content and education methods.

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Writing Objectives

Writing education objectives is an underappreciated skill. Learners, teachers, and curriculum planners frequently have difficulty in formulating or explaining the objectives of a curriculum despite the importance of objectives.

The key to writing useful education objectives is to make them specific and measurable. Such objectives should contain five basic elements: who will do how much, (how well) of what by when?

1. Who
2. Will do
3. How much or how well
4. of What
5. by when?

EXAMPLE: Who (each resident) will do (demonstrate, obtain) how much (once) of what (the appropriate technique for a Pap smear and cervical cultures) by when (the end of the curriculum).

This specific objective could be measured by observation using a checklist

Here are some guidelines for developing program and rotation objectives:

- ✓ All your objectives should be phrased so that your action verb completes a resident-centric statement such as: “By the end of this rotation, residents will be able to:--“
- ✓ When writing specific measurable objectives, use words that have few potential interpretations (e.g., to list or demonstrate) rather than words that are open to many interpretations (e.g., to know or be able). Table 1 provides lists of more- and less-precise words to use in writing objectives.
- ✓ Seek as much differentiation as possible between the knowledge, skills, attitudes and behaviors (KSABs)* encompassed under Medical Knowledge and Patient Care. Table 2 below lists some verbs associated with each competency that may help you in this process.
- ✓ Where there is a need for further breakdown by both PG year and by competencies, start by integrating the competencies together, then see what you have before beginning the breakdown by PG year. Table 3 provides a list of words that can help you differentiate between novice, intermediate and master-level knowledge, skills, attitudes and behaviors.
- ✓ Finally, it’s important to have persons who are not involved in developing the curriculum review the objectives to ensure that anyone reading them can accurately describe what the objectives are intended to convey.

Table 1: Words Open to More and Fewer Interpretations

Instead of:	Use:
“Know,” “Understand” or “Learn”	List, Recite, Present, Sort, Distinguish, Define, Describe, Give an example of
“Be able”	Demonstrate (as measured by), Use
“Know how”	Internalize, Incorporate into performance (as measured by)
“Appreciate”	Rate as valuable
“Grasp the significance of”	Rank as important
“Believe”	Identify, rate, or rank as a belief or opinion

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“Enjoy”	Rate or rank as enjoyable
“Teach”	Direct; (use one of the above terms; do not confuse the teacher and the learner in writing learner objectives)

Table 2: Verbs to Describe ACGME Competency Objectives

Medical Knowledge	Patient Care	Practice-Based Learning & Improvement	Interpersonal & Communication Skills	Professionalism	Systems-Based Practice
Describe Explain Clarify Verbalize Characterize Identify Delineate List Name Achieve (e.g. % score on exam)	Manage Anticipate Perform Evaluate Diagnose Provide Demonstrate Recognize Function	Collect (data) Appraise literature Assess Formulate (e.g. diagnosis, treatment plan) Apply (to case) Review (e.g. charts, case) Problem-solve Establish goal Plan Measure	Discuss Review Interact (e.g. with family, members of health care team) Consult Resolve Manage conflict Negotiate Give feedback Articulate Write Express	Role model Lead Consult Attend (e.g. conferences, % of lectures) Dress Decide Determine (e.g. best plan of care) Guide Educate (e.g. medical student, team-member) Verbalize (good for assessing attitudes, e.g. justification of care plan)	Act (e.g. as patient advocate) Identify resources Manage Negotiate Consult Deliver Provide efficient care Educate (patient, team member) Assess efficiency Make decisions

*Note that it is part of the Institutional Requirements that sponsoring institutions ensure all programs articulate these KSABs by competency for each program, each rotation and/or educational experience.

Table 3: Differentiating between PGY Levels:

Less advanced: (use more descriptive words)	More advanced: (use more active words)
Discern (e.g. between effective & non-effective leader) Adopt (e.g. demeanor, mature attitude) Recite (e.g. protocol, process to faculty) Perform (e.g. procedure) Attempt Emulate Strive Demonstrate Express	Lead Direct Embody Role model Instruct Master Initiate Implement Justify

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Strategies for involving faculty in developing learning objectives:

- ✓ The easiest thing to do is to interview the faculty Director of rotation using an opening phrase to help you guide their choice of verbs and make the objectives concrete. (“By the end of this rotation, residents are (or should be) able to:--”) This will also promote consistency of tense and format. Sometimes physician faculty are too close to the resident and work, however, so it can be helpful to, additionally, interview a selection of different people the trainee works with: nurses, lab technicians, unit coordinators, other residents.
- ✓ In a small group setting or by distributing and collecting cards, request that faculty articulate the top 3 to 5 KSABs that graduates of their program/residents completing their rotation MUST exhibit before the ending of the training program or rotation. You can try this by breaking it down into each category (e.g. top three pieces of knowledge, three essential skills, three attributes of character, three essential practices)
- ✓ Because sometimes faculty find it easier to identify what a trainee should NOT do or to point to what constitutes ineffective practice, behavior or counterproductive attitudes, use of a case scenario in which a trainee has not performed their job well can be a productive point of departure for detailing the requisite KSABs necessary for attaining competency.
- ✓ Similarly, use of a videotaped clinical skills assessment conducted for a physician in remediation can help faculty explore the fine lines that exist between effective and not-so-effective behaviors and practice, particularly those that emerge under stress. These are especially helpful in identifying what communication and systems skills are needed to perform effectively in a team setting. Such assessments, because they are accompanied by de-identified real case records, can also help differentiate subtler expectations regarding effective and ineffective written communication, as well as physicians’ ability to adapt to a patient’s cultural background or those varied expectations family members may have.
- ✓ Observe faculty training residents by shadowing them in clinic or inpatient settings. During what windows of opportunity you have, discuss with the attending why they engage in a particular practice as part of the resident’s education. Perception-check with faculty about the legitimacy of your objectives/claims by testing out your observations of their goals (e.g. “so when the resident leaves this room, you want to know the family members have observed a full pre-operative safety check—not just that one was done.”)
- ✓ Conduct a faculty development needs analysis. Sometimes asking faculty attendings what topic areas they feel they need some growth or development allows them to articulate in more concrete, personal terms a sense of what’s needed or missing from their own vantage point and practice. Both because they’re more invested in these specific areas and because they can engage in learning of their own, this strategy can sometimes be successful as a point of departure for getting engagement in designing effective objectives.