National Kidney Foundation®

OUTCOME LEVELS, LEARNING OBJECTIVES, and CONTENT OUTLINES

A comparison and expanded outcomes framework with the original framework for planning and assessing CE activities:

Original CE Framework	Miller's Framework	Expanded CE Framework	Description	Source of Data
Participation		Participation **LEVEL 1**	The number of learners who participated in the CE activity	Attendance records
Satisfaction		Satisfaction **LEVEL 2**	The degree to which the expectations of the learners about the setting and delivery of the CE activity were met	Questionnaires/evaluations completed by attendees after the CE activity
Learning	Knows	Learning: Declarative Knowledge **LEVEL 3A**	The degree to which learners state *what* the CE activity intended them to know	*Objective*: Pre- and post-test of knowledge *Subjective*: Self-report of knowledge gain
	Knows how	Learning: Procedural Knowledge **LEVEL 3B**	The degree to which learners state *how* to do what the CE activity intended them to know how to do	*Objective*: Pre- and post-test of knowledge *Subjective*: Self-report of knowledge gain
	Shows how	Competence: **LEVEL 4**	The degree to which learners *show* in an educational setting *how* to do what the CE activity intended them to be able to do	*Objective*: Observation in educational setting *Subjective*: Self-report of competence; intent to change
Performance	Does	Performance **LEVEL 5**	The degree to which learners *do* what the CE activity intended them to be able to do in their practices	*Objective*: Observation of performance in patient care setting; patient charts; administrative databases
Patient health		Patient health **LEVEL 6**	The degree to which the health status of patients improves due to changes in the practice behavior of learners	*Objective*: Health status measures recorded in patient charges or administrative databases *Subjective*: Patient self-report of health status
Community health		Community health **LEVEL 7**	The degree to which the health status of a community of patients changes due to changes in practice behavior of learners	*Objective*: Epidemiological data and reports *Subjective*: Community self-report

Outcomes Levels, Data Source, and Process[1]

Outcome Level	Data Source and Process
Level 1: Participation	Learner registration allows NKF to track demographic information and participation. According to Moore's updated framework for outcomes evaluation in the continuing professional development of learners, the suggested data source for measurement of this level is the activity records.
Level 2: Satisfaction	A detailed activity evaluation is required at the conclusion of every activity to measure variables related to design, implementation, and subject matter. Satisfaction of learning objectives, content, suggestions for improvement, suggestions for future activities, absence of commercial bias, and general questions are sought. According to Moore's updated framework for outcomes evaluation, the suggested data source for measurement of this level is learner evaluations.
Level 3: Declarative and Procedural Learning	Level 3 outcomes are captured by testing participants prior to live and enduring activities using content-related clinical assertion questions as well as embedding key measurement indicators within the activity. The same questions are subsequently included in the post-test. The aggregated results also act as indicators to determine whether concepts and data within the presentation result in an increase in overall knowledge. Additionally, barriers to learning are identified through aggregation of activity evaluations. According to Moore's updated framework for outcomes evaluation, the suggested data sources for measurement of this level are pre- and post-tests.
Level 4: Competence	Case vignettes are used to measure application of knowledge discussed in each activity. In many cases, the activity itself is case-based. Learners are tested on knowledge retention and application within each clinical scenario. This information, coupled with baseline knowledge of the subject and immediate learning related to the content, allows for Level 4 outcomes analysis. According to Moore's updated framework for outcomes evaluation, the suggested data sources for measurement of this level are virtual observations in the educational setting.
Level 5: Performance	At the conclusion of each activity, learners are asked to provide examples of how they intend to change their performance as a result of the activity content. Examples are aggregated by NKF. Through 30-day follow-up surveys, learners are asked whether the performance changes they identified were made. According to Moore's updated framework for outcomes evaluation, the suggested data sources for measurement of this level are observations in the clinical setting and self-reported performance changes.

Outcomes Source

1. Moore DE Jr, Green JS, Gallis HA. Achieving desired results and improved outcomes: integrating planning and assessment throughout learning activities. *J Contin Educ Health Prof*. 2009;29(1):1-15.

Learning Objectives

Steps to writing clear and measurable CME/CE learning objectives:

When writing meaningful, actionable, and measureable learning objectives, think about ***what*** you want the ***learner*** to ***do*** with the information presented in relation to how they treat or manage patients, or in relation to the scope of their daily practice/activities. Do you want them to think about it, comprehend it, or act on it?

Examples:

At the conclusion of this CE activity, participants should be better able to:

- *Identify current FDS approved pain medications and classify their risk for abuse based on their mechanisms of action*
- *Interpret data from recent clinical trials presented during this activity and assess how the findings may impact your current pain medication management strategies to improve patient adherence*
- *Evaluate the emerging pain management medications discussed in this activity that may have a lower risk of abuse and consider their utility in your current pain management treat plans*
- *Develop a pain medication monitoring program for your patients in order to minimize the risk for pain medication abuse*

Notes:

- There should be 2-3 learning objectives for every 60 minutes of content
- Typically, your faculty will "review," "describe," and "discuss" information. Whenever possible, these verbs should not be used when writing actionable learning objectives.

Bloom's Taxonomy Verb List for Learning Objectives

KNOWLEDGE-BASED		APPLICATION-BASED		PRACTICE-BASED	
Activities are primarily constructed to transmit knowledge (i.e., facts). The facts must be based on evidence as accepted in the literature by the health care professions.		**Activities are primarily constructed to apply the information learned in the time frame allotted. The information must be based on evidence as accepted in the literature by the health care professions.**		**Activities are primarily constructed to instill, expand or enhance practice competencies through the systematic achievement of specified knowledge, skills attitudes and performance behaviors. The information within the practice-based CE activities must be based on evidence as accepted in the literature by the health care professions. The format of these CE activities should include a didactic component and a practice experience component. The provider should employ an instructional design that is rationally sequenced, curricular based and supportive of achievement of the stated professional competencies.**	
Suggested activity learning techniques: Lecture, visuals, examples, illustrations, analogies, test/assessment, review, writing, presentations, matching questions/answers, questions, discussion, report		*Suggested activity learning techniques: Role play, simulations, practice exercises, demonstrations, projects, case studies, problems, discussion, pro/cons grid, application exercises*		*Suggested activity learning techniques: Problems exercises, case studies, develop plans, simulations, projects, critiques, simulations*	
Knowledge	**Comprehension**	**Application**	**Analysis**	**Synthesis**	**Evaluation**
Cite	Add	Acquire	Analyze	Abstract	Appraise
Define	Approximate	Adapt	Audit	Animate	Assess
Describe	Articulate	Allocate	Blueprint	Arrange	Conclude
Draw	Associate	Alphabetize	Breadboard	Assemble	Counsel
Enumerate	Clarify	Apply	Break down	Budget	Criticize
Index	Compute	Ascertain	Characterize	Categorize	Critique
Indicate	Convert	Assign	Classify	Code	Defend
Label	Defend	Attain	Compare	Combine	Discriminate
List	Describe	Avoid	Confirm	Compile	Estimate
Match	Detail	Back up	Contrast	Compose	Evaluate
Meet	Discuss	Calculate	Correlate	Construct	Grade
Name	Elaborate	Capture	Detect	Cope	Hire
Outline	Example	Change	Diagnose	Correspond	Judge
Point	Express	Classify	Diagram	Create	Justify
Quote	Extend	Complete	Differentiate	Cultivate	Measure
Read	Extrapolate	Compute	Discriminate	Debug	Predict
Recall	Generalize	Construct	Dissect	Depict	Prescribe
Recite	Give	Customize	Distinguish	Design	Rank
Recognize	Infer	Demonstrate	Document	Develop	Rate
Record	Interact	Depreciate	Ensure	Devise	Recommend
Repeat	Interpolate	Derive	Examine	Dictate	Release
Reproduce	Observe	Determine	Explain	Enhance	Select
State	Paraphrase	Diminish	Explore	Facilitate	Support
Study	Picture graphically	Discover	Figure out	Format	Test
Trace	Predict	Draw	File	Formulate	Validate
Write	Review	Employ	Group	Generate	Verify

KNOWLEDGE-BASED **Activities are primarily constructed to transmit knowledge (i.e., facts). The facts must be based on evidence as accepted in the literature by the health care professions.**		APPLICATION-BASED **Activities are primarily constructed to apply the information learned in the time frame allotted. The information must be based on evidence as accepted in the literature by the health care professions.**		PRACTICE-BASED **Activities are primarily constructed to instill, expand or enhance practice competencies through the systematic achievement of specified knowledge, skills attitudes and performance behaviors. The information within the practice-based CE activities must be based on evidence as accepted in the literature by the health care professions. The format of these CE activities should include a didactic component and a practice experience component. The provider should employ an instructional design that is rationally sequenced, curricular based and supportive of achievement of the stated professional competencies.**	
Suggested activity learning techniques: Lecture, visuals, examples, illustrations, analogies, test/assessment, review, writing, presentations, matching questions/answers, questions, discussion, report		*Suggested activity learning techniques: Role play, simulations, practice exercises, demonstrations, projects, case studies, problems, discussion, pro/cons grid, application exercises*		*Suggested activity learning techniques: Problems exercises, case studies, develop plans, simulations, projects, critiques, simulations*	
Knowledge	**Comprehension**	**Application**	**Analysis**	**Synthesis**	**Evaluation**
	Rewrite	Exercise	Identify	Handle	
	Subtract	Expose	Illustrate	Import	
	Visualize	Express	Infer	Improve	
		Factor	Interpret	Incorporate	
		Figure	Inventory	Integrate	
		Graph	Investigate	Interface	
		Illustrate	Layout	Join	
		Interconvert	Manage	Lecture	
		Investigate	Maximize	Model	
		Manipulate	Minimize	Modify	
		Operate	Optimize	Network	
		Personalize	Order	Organize	
		Plot	Point out	Overhaul	
		Practice	Prioritize	Plan	
		Price	Proofread	Portray	
		Process	Query	Prepare	
		Project	Separate	Produce	
		Provide	Size	Program	
		Round off	Subdivide	Rearrange	
		Sequence	Train	Reconstruct	
		Show	Transform	Relate	
		Simulate		Reorganize	
		Sketch		Revise	
		Solve		Rewrite	
		Subscribe		Specify	
		Transcribe		Summarize	
		Translate		Write	
		Use			

Content Outlines

When filling out the "Content" section of your Educational Planning Table:

Do:

- Outline the topics that will be covered that correspond with each learning objective
- Describe how participants will reach the stated objective(s)
- Be specific (i.e. if "criteria for subject x" is to be covered, list the criteria)
- Identify the meaning of all acronyms

Don't:

- Provide speaker objectives (i.e. "Discuss criteria for subject x")
- Restate the learning objective

Examples:

For the learning objective, "*Identify three sources of potential spiritual distress with chronically ill patients*":

- Spiritual distress – define
- Causes of spiritual distress
    - Interruption of religious practices
    - Inner conflict and guilt
    - Expresses feelings of abandonment by their own religious group or God
    - Questions moral or ethical implications of therapies, especially those involving: reproduction, blood transfusion, amputation or removal of organs and/or dietary restrictions

For the learning objective, "*Identify the guidelines and available treatment options for hyperphosphatemia*":

- KDIGO Focus – normal treatment target ranges for phosphorus
- Changes in management patterns in Hemodialysis (HD) populations
- Treatment options
    - Diet
    - Dialysis
    - Phosphate Binders
    - Evolution of phosphate binders
- Current treatment options and limitations of phosphate binder – Phosphate binders and survival of non-dialysis dependent, CKD patients and HD patients

