**Why are we asking for learning outcomes?**

The International Institute for Restorative Reproductive Medicine Educational Webinar series, including Grand rounds, Journal club and Research Update is accredited with AAFP (American Academy of Family Physicians) for continuing education credits (CME). Each 60 minute webinar is accredited for 1.0 prescribed come credits. Members have to attend for 50 minutes in order to receive prescribed credit, this includes questions following the presentation. These continuing education credits are reciprocally recognized by other organizations for CME including the CCFP (College of Family Physicians of Canada) and the AMA (American Medical Association).

This process requires the us to submit learning outcomes each summer for webinars given in the upcoming calendar year. If you are new to developing learning outcomes we have some quick tips and examples below. If you need any help or have questions please email kathleen@restorative-reproductive-medicine.com. Kathleen, or another secretary will reach out in July and August to collect and/or assist with your learning outcomes.

The overall learning outcomes for the International Institute for Restorative Reproductive Medicine Educational Live Webinar Series are:

1. *To appreciate infertility as a chronic condition for women and men with implications for long-term health and medical management*
2. *To understand the role of environmental exposures, chemicals, and some pharmaceuticals in disrupting natural fertility and reproductive function in women and men*
3. *To review and discuss clinical cases of infertility and reproductive health to improve management in women and men*
4. *To update participants about ongoing research related to understanding and supporting normal fertility and reproductive function in women and men*
5. *To evaluate current and emerging evidence for medical and surgical care that supports normal fertility and reproductive function in women and men*
6. *To appreciate the impact of evidence-based complementary forms of medicine on normal fertility and reproductive function in women and men*

# Writing Learning Objectives for CME Activities: Some Quick Tips and Examples

Learning objectives should state what the participant is expected to learn and be able to do as a result of participating in the activity. They should be stated in measurable terms. They should connect the identified educational need(s) to the desired outcome(s) and are supported by/developed from the content of the educational activity (your webinar presentation).

Note: A learning objective is not a listing of what the "teacher" will do or provide. In CME, objectives are written in terms of what the physician will do in the practice setting with the information being taught.

An example format to introduce the statement of educational objectives is:

"At the conclusion of this activity/session/course, participants should be able to ...."

Then state what the participants should be able to do. Follow this simple format while keeping the list of verbs by your side to ease the task of writing a good set of objectives.

**EXAMPLES:**

**CORRECT (specific, measurable)**

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

1. Define and describe the different forms of visuo-spatial disorders.

2. Choose proper assessment methods and identify clinical significance.

**INCORRECT (too vague, not measurable)**

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

1. Understand visuo-spatial disorders.

2. Learn the underlying pathophysiology.

**Learning should objectives contain two major parts:**

1. A <u>noun</u> – the content to be learned
    a. Examples: disease processes, new treatment guidelines, procedural skills
2. A <u>verb</u> – the process or skill to be learned
    a. Examples: define, recite, compare and contrast, demonstrate

The verb selected should be achievable based on the educational content presented. For example, expecting a learner to *list* the steps necessary to perform a thoracentesis is different than expecting the learner to *demonstrate* a thoracentesis. The educational method(s) used will help determine the achievability of the learning objectives. For example, a one-hour didactic lecture on thoracentesis would allow a learner to *list* the steps necessary to perform a thoracentesis. However, a 3 hour hands-on simulation activity would be more appropriate to allow a learner to *demonstrate* a thoracentesis.

A list of suggested verbs for learning objectives is at the end of this article. Avoid verbs such as appreciate, believe, have faith in, be familiar with, know, learn, and understand.

A useful method for writing learning objectives follows the Kern and Thomas Approach[1]. This approach facilitates the construction of a measurable learning objective that contain a "noun" and a "verb". The learning objective is created using the following framework:

Who will do how much (how well) of what by when?

| Who | Will do | How much? (how well) | Of what | By when |
|---|---|---|---|---|
| The learner, provider, physician, participant, etc. | What do you want them to do? <u>VERB</u> | How well should the action/ behavior be done (if applicable) | What do you want them to learn? <u>NOUN</u> | End of the lecture, course, series, year, etc. |

Example 1: Participants will be able to identify the latest updates to the ACLS algorithm by the end of this lecture.

Example 2: Learners will be able to demonstrate central venous catheter placement at a mastery level by the completion of the course.

Example 3: At the completion of this activity, physicians will

- propose 3 strategies for improving tobacco use screening in the outpatient setting

- discuss behavioral counseling techniques for the reluctant quitter

- describe an evidence based approach to tobacco cessation pharmacotherapy

Example 4: At the conclusion of this activity, participants will be better able to:

- Explain the ergonomics, theory and rational for reproducible laparoscopic suturing
- Apply skills learned to relevant reproductive surgery including myomectomy and tubal surgery
- Demonstrate measurable improvement in laparoscopic suturing skills
- Identify areas where critical information is lacking and specify needs for future studies
- Summarize the current literature regarding the impact of fibroids on fertility and the outcomes of myomectomy (abdominal, laparoscopic, or hysteroscopic) as they affect fertility

## Online Resources:

1) **AAFP Guidelines:** https://www.aafp.org/dam/AAFP/documents/cme/faculty_development/LearningObjectivesGuidelines.pdf
2) https://medicine.wright.edu/continuing-medical-education/objectives-guidelines
3) http://jeffline.jefferson.edu/jeffcme/application/intake/files/guidelines_learning_objectives.pdf
3) https://med.stanford.edu/content/dam/sm/CME/documents/Resources/effective-objectives.pdf

[1] Kern, D.E., Thomas, P.A. & Hughes, M.T. (Eds.). (2010) Curriculum development for medical education: a six-step approach. Johns Hopkins University Press.

# List of Verbs for Formulating Educational Objectives

The following verbs have been found to be effective in formulating educational objectives:

1. Those that communicate knowledge:

<u>Information:</u>

| | | | | | |
|---|---|---|---|---|---|
| cite | identify | quote | relate | tabulate | count |
| indicate | read | repeat | tell | define | list |
| recite | select | trace | describe | name | recognize |
| state | update | draw | point | record | summarize |
| write | | | | | |

<u>Comprehension:</u>

| | | | | | |
|---|---|---|---|---|---|
| assess | contrast | distinguish | interpolate | restate | associate |
| demonstrate | estimate | interpret | review | classify | describe |
| estimate | interpret | review | translate | compare | differentiate |
| express | predict | compute | discuss | extrapolate | report |

<u>Application:</u>

| | | | | | |
|---|---|---|---|---|---|
| apply | employ | match | relate | sketch | calculate |
| examine | operate | report | solve | choose | illustrate |
| order | restate | translate | complete | interpolate | practice |
| review | treat | demonstrate | interpret | predict | schedule |
| use | develop | locate | prescribe | select | utilize |

<u>Analysis:</u>

| | | | | | |
|---|---|---|---|---|---|
| analyze | criticize | diagram | infer | question | appraise |
| debate | differentiate | inspect | separate | contract | deduce |
| distinguish | inventory | separate | contrast | detect | experiment |
| measure | | | | | |

<u>Synthesis:</u>

| | | | | | |
|---|---|---|---|---|---|
| arrange | construct | formulate | organize | produce | assemble |
| create | generalize | plan | propose | collect | design |
| integrate | prepare | specify | combine | detect | manage |
| prescribe | validate | compose | document | | |

<u>Evaluation:</u>

| | | | | | |
|---|---|---|---|---|---|
| appraise | critique | evaluate | rank | score | assess |
| decide | grade | rate | select | choose | determine |
| judge | recommend | test | compare | estimate | measure |
| revise | | | | | |

2. Those that impart skills:

| | | | | | |
|---|---|---|---|---|---|
| demonstrate | hold | massage | pass | visualize | diagnose |
| integrate | measure | write | diagram | internalize | operate |
| project | empathize | palpate | record | listen | |

3. Those that convey attitudes:

| | | | | | |
|---|---|---|---|---|---|
| acquire | exemplify | plan | reflect | transfer | consider |
| modify | realize | revise | | | |

*These words are better avoided:*

*Those that are often used but are open to many interpretations:*
*appreciate      have faith in      know      learn      understand      believe*