



## CONTINUING PHARMACY EDUCATION

### What is Continuing Education?

Continuing education for the profession of pharmacy is a structured educational activity designed or intended to support the continuing professional development of pharmacists and/or pharmacy technicians to maintain and enhance their competence. Continuing pharmacy education (CPE) should promote problem-solving and critical thinking and be applicable to the practice of pharmacy.

### What does “applicable to the practice of pharmacy” mean?

In general, for guidance in organizing and developing CPE activity content, providers should ensure pharmacists and pharmacy technicians develop and maintain proficiency in six core areas:

1. Delivering patient-centered care
2. Working as part of interprofessional teams
3. Practicing evidence-based medicine
4. Focusing on quality improvement
5. Using information technology, and
6. Developing and maintaining safe and effective medication use processes

Please review this document for information on how to prepare a high-quality CPE activity. The information in this document conforms to ACPE standards. If you have questions, email: [PharmacyCE@oregonstate.edu](mailto:PharmacyCE@oregonstate.edu)

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### Conflict of Interest

#### WHAT IS A CONFLICT OF INTEREST?

The OSU College of Pharmacy is accredited by the Accreditation Council for Pharmacy Education (ACPE). We appreciate your help in partnering with us in following accreditation guidelines and creating high-quality educational programming that is independent of industry influence. To participate as a person who will be control any part of education content of this accredited CE activity, we ask you disclose all financial relationships you have had with any ineligible companies during the past 24 months.

We define ineligible companies as those whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients. There is no minimum financial threshold; you must disclose all financial relationships, regardless of the amount, with ineligible companies. We ask you to disclose regardless of whether you view the financial relationship as relevant to the education.

Examples of ineligible organizations may include, but are not limited to:

- Advertising, marketing, or communication firms whose clients are ineligible companies
- Bio-medical startups that have begun a governmental regulatory approval process
- Compounding pharmacies that manufacture proprietary compounds
- Device manufacturers or distributors
- Diagnostic labs that sell proprietary products
- Growers, distributors, manufacturers or sellers of medical foods and dietary supplements
- Manufacturers of health-related wearable products
- Pharmaceutical companies or distributors
- Pharmacy benefit managers (PBMs)
- Reagent manufacturers or seller

All CE activity planners and faculty members must provide disclosure of financial relationships to learners, even if there are none. The next page has examples of how to properly disclose this information.

#### WHY DO WE COLLECT THIS INFORMATION?

Since healthcare professionals serve as the trusted authorities when advising patients, they must protect their learning environment from industry influence to ensure they remain true to the ethical commitments. Many healthcare professionals have financial relationships with ineligible companies. By identifying and mitigating relevant financial relationships, we work together to create a protected space to learn, teach, and engage in scientific discourse free from influence from organizations that may have an incentive to insert commercial bias into education.

#### WHAT ARE THE NEXT STEPS IN THIS PROCESS?

After we receive your disclosure information, we will review it to determine whether your financial relationships are relevant to the education. Please note: the identification of relevant financial relationships does not necessarily mean you are unable to participate in the planning and implementation of this education activity. Rather, accreditation standards require relevant financial relationships are mitigated before you assume your role in this activity.

To help us meet these expectations, please use the form provided in the speaker packet to share all financial relationships you have had with ineligible companies during the past 24 months. This information is necessary for us to be able to move to the next steps in planning this continuing education activity.

If any of your relationships are deemed relevant to the educational material, you will be contacted to complete the mitigation steps necessary to proceed in your role with the CE activity.

If you have questions, please contact the OSU College of Pharmacy CPE Office at [PharmacyCE@oregonstate.edu](mailto:PharmacyCE@oregonstate.edu).



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### Communicating Disclosure to Learners

Use the sample language below to provide disclosure to learners in a format that can be verified during the accreditation review process. Disclosure must be provided to learners **BEFORE** engaging in the continuing education activity. *Note: only relevant financial relationships that have been mitigated must be disclosed. If a financial relationship has been determined to be not relevant, it does not need to be disclosed.*

#### EXAMPLES FOR PROVIDING DISCLOSURES TO LEARNERS

<b>If there are NO RELEVANT financial relationships:</b>  <i>Inform learners planners, faculty, and others in control of content (either individually or as a group) do not have relevant financial relationships with ineligible companies.</i>	<b>If there ARE RELEVANT financial relationships:</b>  <i>Disclose name(s) of individuals, name of the ineligible company(ies) with which a relevant financial relationship exists, the nature of the relationship(s), <b>and</b> a statement that all relevant financial relationships have been mitigated.</i>
Dr. John Doe, faculty for this CE activity, has no relevant financial relationship(s) with ineligible companies to disclose.  -----	Dr. John Doe is on the speakers' bureau for XYZ Company.
Drs. Jane Smith and Jill Green have no relevant financial relationship(s) with ineligible companies to disclose.  -----	Dr. Jane Smith has received a research grant from ABC Company.
None of the planners for this activity have relevant financial relationships to disclose with ineligible companies.	All the relevant financial relationships listed for these individuals have been mitigated.



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### Gap Analysis

A gap analysis should be performed to identify the knowledge gap between what pharmacists and pharmacy technicians already do, and what is needed or desired in practice. The Gap Analysis should be the driving force for the activity learning objectives, active learning exercises, and assessment/outcomes.

#### When identifying a knowledge gap:

- Consider proven, inferred, and verbalized needs
  - **Proven needs** are based on objective, internal, and external data sources (epidemiologic data, audit data, statistics, journal articles/literature citations, incident/event reporting systems, etc.)
  - **Inferred needs** are derived from new methods/agents/treatment guidelines, development of new technology/techniques, input from experts regarding advances in knowledge or opportunities, and/or legislative, regulatory, or organizational changes
  - **Verbalized needs** are derived from staff or team member requests, formal surveys, informal comments, patient problem inventories, consensus from faculty members, and/or committee notes/minutes
- Ask yourself the following:
  - What is the current practice of pharmacists or technicians?
  - What is a better or the best practice?
  - Who is the audience? Can this topic be suitable for both pharmacists and pharmacy technicians? How?
  - Why have this education?
  - What impact will this education have on the audience?

#### Example of a gap analysis:

Activity Title/Topic	Current Practice	Best/Better Practice	Educational Need	Identified By	Activity Type
<i>Review of Chemotherapy Induced Nausea and Vomiting</i>	<i>An estimated 70-80% of patients undergoing chemotherapy experience nausea and vomiting</i>	<i>Only 10% of patients undergoing chemotherapy should experience nausea and vomiting</i>	<i>Pharmacists should know poorly controlled CINV can result in weakness, weight loss, electrolyte imbalance, dehydration, or anorexia among chemotherapy patients</i>	<input type="checkbox"/> Practitioners <input type="checkbox"/> Legislative Changes <input type="checkbox"/> New Protocols <input type="checkbox"/> New/Updated Treatment Guidelines <input type="checkbox"/> Literature Review <input checked="" type="checkbox"/> Patient Outcomes <input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Knowledge-based <input type="checkbox"/> Application-based  Rationale: <i>Address lack of knowledge on consequences of CINV</i>



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### Activity Type

The activity type designates how the information will be used by participants after the activity. The activity type helps guide the development of appropriate learning objectives.

**Knowledge-based CPE activities** – these activities are designed primarily for pharmacists and technicians to *acquire factual knowledge*. This information must be based on evidence as accepted in the literature by the health care professions.

**Application-based CPE activities** – these activities are designed primarily for pharmacists and technicians 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.

### Topic Designation

ACPE utilizes the following options to designate an activity a specific topic. Please choose the topic that most appropriately describes your presentation.

**01: Disease State Management/Drug Therapy** - activities that address drugs, drug therapy, and/or disease states.

**02: AIDS Therapy** - activities that address therapeutic, legal, social, ethical, or psychological issues related to the understanding and treatment of patients with HIV/AIDS.

**03: Law Related to Pharmacy Practice** - activities that address federal, state, or local laws and/or regulations affecting the practice of pharmacy.

**04: Pharmacy Administration** - activities that address topics relevant to the practice of pharmacy that include the economic, social, administrative and managerial aspects of pharmacy practice and health care.

**05: Patient Safety** - activities that address topics relevant to the prevention of healthcare errors and the elimination or mitigation of patient injury caused by healthcare errors.

**06: Immunizations** - activities related to the provision of immunizations, i.e., recommend immunization schedules, administration procedures, proper storage and disposal, and record keeping. This also includes review for appropriateness or contraindication and identifying and reporting adverse drug events and providing necessary first aid.

**07: Compounding** - activities related to sterile, nonsterile, and hazardous drug compounding for humans and animals. This includes best practices and USP quality assurance standards, environmental testing and control, record keeping, error detection and reporting, and continuous quality improvement processes.

**08: Pain Management** - activities that address any component regarding the treatment and management of pain, including the prescribing, distribution and use of opioid medications, and/or the risks, symptoms, and treatment of opioid misuse/addiction.

**09: Additional Topic Areas** – activities related to topics relevant to the practice of pharmacy not included in the classifications of the topic designators 01-08.



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### Learning Objectives

Learning objectives are formulated from the gap analysis worksheet and identified educational need(s).

#### When preparing learning objectives:

- Make objectives specific, short-range, and action oriented with respect to
  - **Competence:** change in knowledge, skills, or techniques
  - **Practice:** change in patient care outcomes
  - **Behaviors:** change in attitudes or performance
- Describe observable learner action to be achieved upon activity completion - what will the participant be able to do after attending the activity?
- Design objectives that are supported by activity content and addressed by learning assessment after the activity
- Use measurable verbs which correlate to the activity type (Knowledge- or Application-based)
- **Avoid** verbs such as “understand”, “appreciate”, “be aware of”, “become familiar with”, etc.
- Write a separate objective for each desired outcome
- List objectives in the same order the content will appear to learners

#### Examples of appropriate verbs:

Activity Type: Knowledge			Activity Type: Application		
<b>Knowledge-type Verbs</b>			<b>Application-type Verbs</b>		
Arrange	List	Recognize	Apply	Illustrate	Sketch
Define	Memorize	Recall	Choose	Interpret	Solve
Duplicate	Name	Repeat	Demonstrate	Operate	Use
Label	Order	State	Employ	Practice	Write
<b>Comprehensive-type Verbs</b>			<b>Analysis-type Verbs</b>		
Classify	Identify	Restate	Analyze	Criticize	Experiment
Describe	Locate	Review	Calculate	Differentiate	Investigate
Discuss	Outline	Select	Compare	Distinguish	Research
Explain	Report	Translate	Contrast	Examine	Test

#### Examples of learning objectives:

Gap(s) Identified	Appropriate Learning Objectives
Staff must be informed of a change in how patients are cared for	At the completion of this activity, the participant will be able to: 1. Discuss new literature regarding treating... 2. Illustrate how best to target patients affected by... 3. Adjust pharmacy operations and process flow to reduce medication errors related to...
Need for improved outcomes	At the completion of this activity, the participant will be able to: 1. Predict factors which make communication with some patients difficult... 2. Describe the importance of proper patient education... 3. Demonstrate how to communicate effectively with...
Staff members are lacking confidence in medication changes	At the completion of this activity, the participant will be able to: 1. Describe how to determine which medications... 2. Perform calculations using a new renal dosing program to... 3. Identify patients to closely monitor for...



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### Self-Evaluation Questions

#### When preparing pre- and post-test questions:

- Write one question for each learning objective
- Questions should measure the educational objective for which it is was designated
- **For Application-based activities:** questions must include a case study structured to address the application of the principles learned
- **For Knowledge-based activities:** questions should determine recall of facts
- Questions should be written as multiple choice. True or False questions are acceptable but should be limited to 1 T/F per 5 questions. Fill-in-the-blank is also acceptable if multiple options are provided
- You should review the questions and answers during your presentation, post-test questions will be part of the online activity evaluation completed by participants upon conclusion of the activity
- Feedback/rationale for why a response is correct or incorrect should be provided. The correct evaluation of the case study is required for Application-based activities

#### Example of a pre- and post-test question:

NHLBI is expected to release their expert guidelines, JNC8, Fall of 2011. It is anticipated these new guidelines will recommend significant changes in how patients are managed with respect to first line drug therapy and hypertension. What type of education need might you consider this?

- A. Proven need (Proven needs are identified through data and this educational need is not data driven.)
- B. Inferred need (This is the correct answer because inferred needs are identified by the release of new guidelines and this need exists due to the release of JNC8.)**
- C. Verbalized need (Verbalized needs are identified through communication from staff and this need has not been requested by staff members.)
- D. None of the above



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### Pharmacist Competencies

All accredited CPE activities must comply with ACPE Standards. When preparing a presentation for pharmacists, please keep in mind the following Pharmacy Competencies provided by the American Association of Colleges of Pharmacy (AACP) [Curricular Outcomes and Entrustable Professional Activities \(COEPA\) 2022](#):

#### Knowledge

1. **Scientific Thinking:** seek, analyze, integrate, and apply foundational knowledge of medications and pharmacy practice

#### Skills

1. **Problem Solving:** use problem solving and critical thinking skills, along with an innovative mindset, to address challenges and to promote positive change
2. **Communication:** Actively engage, listen, and communicate verbally, nonverbally, and in writing when interacting with or educating an individual, group, or organization
3. **Cultural and Structural Humility:** Mitigate health disparities by considering, recognizing, and navigating cultural and structural factors to improve access and health outcomes
4. **Person-centered Care:** provide whole person care to individuals and the medication specialist using the Pharmacists' Patient Care Process
5. **Advocacy:** Promote the best interests of patients and/or the pharmacy profession within healthcare settings and at the community, state, or national level
6. **Medication-use Process Stewardship:** Optimize patient healthcare outcomes using human, financial, technological, and physical resources to improve the safety, efficacy, and environment impact of medication use systems
7. **Interprofessional Collaboration:** Actively engage and contribute as a healthcare team member by demonstrating core interprofessional competencies
8. **Population Health and Wellness:** Assess factors that influence the health and wellness of a population and develop strategies to address those factors
9. **Leadership:** Demonstrate the ability to influence and support the achievement of shared goals on a team, regardless of one's role

#### Attitudes

1. **Self-Awareness:** Examine, reflect on, and address personal and professional attributes that could enhance or limit growth, development, & professional identity formation
2. **Professionalism:** Exhibit attitudes and behaviors that embody a commitment to building and maintaining trust with patients, colleagues, other healthcare professionals, and society



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### Pharmacy Technician Competencies

Oftentimes the intended audience for a CPE activity will include both Pharmacists and Pharmacy Technicians as there is more emphasis on the collaborative behaviors and workflow of pharmacy technicians with pharmacists and healthcare staff. Pharmacy technicians are required to engage in CPE to meet regulatory and certification requirements.

All accredited CPE activities must comply with ACPE Standards. Organizations and presenters must plan appropriately for pharmacy technicians including identification of an educational gap, development of measurable learning objectives, inclusion of balanced content, use of active learning techniques, and incorporation of learning assessment methods.

When preparing a presentation for technicians, please keep in mind the following Pharmacy Technician Competencies provided by the [Pharmacy Technician Certification Exam \(PTCE\) Content Outline](#):

#### Medications

1. Generic names, brand names, and classifications of medications
2. Therapeutic equivalence
3. Common and life-threatening drug interactions and contraindications
4. Strength/dose, dosage forms, routes of administration, special handling and administration instructions, and duration of drug therapy
5. Common and severe medication side effects, adverse effects, and allergies
6. Indications of medications and dietary supplements
7. Drug stability
8. Narrow therapeutic index (NTI) medications
9. Physical and chemical incompatibilities related to non-sterile compounding and reconstitution

#### Federal Requirements

1. Handling and disposing of non-hazardous, hazardous, and pharmaceutical substances and waste
2. Controlled substance prescriptions
3. Controlled substances
4. Restricted drug programs and related medication processing
5. FDA recall requirements

#### Patient Safety and Quality Assurance

1. High-alert/risk medications and look-alike/sound-alike (LASA) medications
2. Error prevention strategies
3. Issues that require pharmacist intervention
4. Event reporting procedures
5. Types of prescription errors
6. Hygiene and cleaning standards

#### Order Entry and Processing

1. Procedures to compound non-sterile products
2. Formulas, calculations, ratios, proportions, alligations, conversions, Sig codes, abbreviations, medical terminology, and symbols for days supply, quantity, dose, concentration, dilutions
3. Equipment/supplies required for drug administration
4. Lot numbers, expiration dates, and National Drug Code (NDC) numbers
5. Procedures for identifying and returning dispensable, non-dispensable, and expired medications and supplies



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### Active Learning Techniques

Presentations should include a selection of active learning techniques to keep learners engaged in the material.

Instructional Strategies	Knowledge-Based Activities	Application-Based Activities
Lecture with questions	X	X
Games and quizzes to practice recall	X	X
Demonstrations		X
Examples with practice		X
Interactive case studies		X
Interactive scenarios		X
Role play		X
Simulation		X
Application exercises		X
Practice exercises		X

	Live Activity	Homestudy Activity
<b>Knowledge-based</b>	<ul style="list-style-type: none"> <li>Start with a pre-test</li> <li>Incorporate polling questions</li> <li>Give a 2-minute break for think-pair-share activity on question/scenario</li> <li>End with a post-test and discussion/Q&amp;A</li> </ul>	<ul style="list-style-type: none"> <li>Start with pre-test</li> <li>Incorporate polling questions</li> <li>Give a break for a stop-and-reflect exercise</li> <li>Embed case vignettes focused on recall of information</li> <li>End with post-test and feedback</li> </ul>
<b>Application-based</b>	<ul style="list-style-type: none"> <li>Use all the above</li> <li>Embed case studies during the activity or after the content review</li> <li>Utilize a pro-con grid</li> <li>Include role play or demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Use all of the above</li> <li>Utilize case vignettes throughout activity, building on previous information</li> <li>Embed case studies during the activity or after the content review</li> </ul>



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### Presentation Requirements

The following components must be included in your presentation slides. Your final slides will be reviewed prior to your presentation. If any items are missing or do not conform to ACPE standards, you will be asked to edit your slides.

1. Title slide with speaker's name(s) and title(s)
2. Disclosure slide (see "Communicating Disclosure to Learners" for examples)
3. Learning objectives (for both RPh and CPT)
4. Pre-test questions (for both RPh and CPT)
5. Presentation must be based on current science, evidence, and clinical reasoning; presentation may not advocate for or promote practices not/not yet adequately based on current science, evidence, or clinical reasoning
6. Presentation must not advocate for unscientific approaches to diagnosis or therapy, or promote unsafe, high-risk, or ineffective treatment of patients
7. Presentation must provide a balanced view of therapeutic options – no single product or service should be overrepresented
8. Presentation must be free of commercial bias and must not promote products or services
9. Presentation must promote improvements in healthcare
10. Post-test questions with answers (for both RPh and CPT)



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### Slide Preparation

Be sure your audio-visual aids are effective and add to the quality of the presentation.

#### Non-Commercialism; Equitable Balance

- Pharmaceutical companies or other sponsor logos or names **MUST NOT** appear on any slide or handout
- Brand names for drugs must be accompanied by the generic or chemical name
- Emphasis on one brand name or treatment without a balanced discussion of alternatives is not permissible

#### Keep it Simple

- Limit information to seven lines or less on any one slide
- Use a plain letter style without embellishment—use increased font size or bold text for emphasis
- Ensure font size is large enough to be seen at the back of a large room
- Include references to published materials on the slide
- Avoid using “fly-ins” or similar actions on every slide, excessive use of these detracts from the content of the presentation

#### Use Color for Emphasis

- Use black or dark letters on a light background
- Avoid graduated tones or elaborate shading
- Do not use color combinations that clash (e.g., yellow/red; blue/orange, purple/yellow)
  - Use a color contrast checker: <https://webaim.org/resources/contrastchecker/>

#### Use Simple Illustrations and Figures

- Limit each slide to one idea or image
- Illustrations must be large enough to be easily read and recognized
- Drawings, charts, tables, and graphs should be simple and contain essential details only

#### Keep the Audience Involved

- Talk to the audience, not to the screen
- Timing is key – it takes 30-60 seconds to view a slide, plan for a maximum of 2 minutes viewing time per slide (no more than 4 slides, every 5 minutes); having too many slides frustrates the audience and makes the presentation feel rushed
- Include active-learning techniques throughout the presentation



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### Diversity, Equity, & Inclusion

Speakers and faculty are urged to enhance pharmacists' and pharmacy technicians' knowledge, skills, attitudes, and practices to promote diversity, equity, and inclusion. Strategies to foster diversity, equity, and inclusion, include but are not limited to:

- Incorporate health disparities content into the activity
- Incorporate age, geographic location, ethnicity, race, appearance, disability, gender, sexual orientation, language, literacy, level of education, religion, socioeconomic status, living conditions, and other relevant social determinants of health in teaching and learning methods (i.e. case vignettes, questions, workshop learning activities, etc.)
- Engage learners to recognize, respect, and value perceptions, backgrounds, knowledge, and expertise that come from different health professions
- Educate learners on where there are health disparities in their communities and how pharmacists and pharmacy technicians can serve these populations
- Identify and discuss steps to change a situation for the better
- Provide feedback, coaching, and transparency in order to support mastery learning

For more information, visit:

- [https://www.acpe-accredit.org/pdf/ACPE\\_CE\\_Guidance\\_Diversity\\_Equity\\_Inclusion\\_Jan\\_2021\\_Final.pdf](https://www.acpe-accredit.org/pdf/ACPE_CE_Guidance_Diversity_Equity_Inclusion_Jan_2021_Final.pdf)

### Artificial Intelligence (AI)

Artificial Intelligence (AI) has become prominent in the world of education. If you utilize AI in the development of educational content for a CE activity, you should disclose the following to learners during your presentation:

- The name of the AI application
- The purpose for which you used the AI application
- The version of the AI application
- The date the AI application was used