Defining "Needs Assessment", "Learning Gaps" and the "Outcomes Measurement" Process.

Needs Assessment.

A needs assessment is a systematic exploration of the need for education or training. The process involves first establishing who the learners are (i.e. what is their level of training and expertise) and then determining what skills they have, what skills they need and how best to deliver training to correct any deficiencies.

Learners can be at various stages of professional development, including trainees (residents), junior practicing physicians, mid-career physicians or very experienced physicians. Knowing the learner's professional stage can help shape both content and scope of the educational experience. Usually at AAP sponsored educational activities, there is a mixture of these stages which can make designing the learning experience more challenging.

When planning educational activities, the needs assessment is often based on requests for topics listed on evaluation forms completed by participants in previous activities. It is important to understand this is often an expression of topics in which learners indicate they have an interest and "perceived" need of what they think they should know. Yet, physicians' self-assessment of their learning needs may be unreliable. [Davis DA, Mazmanian PE, Fordis M, et al. Accuracy of physician self-assessments in health profession training. JAMA 2006;296:1094-1102]   More important are the "unperceived" needs that learners do not realize they need to know, and identifying these requires analysis of "learning gaps".

Learning Gaps.

A "learning or professional practice gap" is the term used to describe a learner's deficiency or shortcoming, which if eliminated results in improvements in knowledge, competence and/or performance that can potentially improve health outcomes. Gaps may be defined as the difference between "the way things are" and "the way they should be".

The easiest gaps to identify are those relating to knowledge. Knowledge gaps can be identified by means of questionnaires or review of test scores from in training or board examinations. Correcting gaps in knowledge is important, but usually has the least impact on improving competence or performance and outcomes for patients.

Identifying gaps in competence or performance is more challenging, and there are various ways in which this can be achieved. Some examples are:-

1. Clinical practice guidelines developed by professional organizations constitute standards for what a learner should know or be able to do. Evidence that guidelines are not being followed, or that learners are unfamiliar with new guidelines, constitutes a gap that can be addressed.

2. Consultation with experts or subspecialists provides a means of identifying potential gaps in competence or performance. Based on patterns of referrals, the expert or subspecialist may observe common deficiencies in practice that can be corrected through education.

3. Review of evidence-based literature in scientific journals, practice-based audits and peer review processes can be used for identifying gaps in competence, performance and health outcomes. As an example, published reports of excessive use of PPI's to treat infants with gastroesophageal reflux despite lack of evidence that such medications have any beneficial effects on symptoms constitutes a performance practice gap that requires correction.

4. Analysis of federal government or state public health data may identify disparities in health care and thus serve as a "gap" requiring corrective education.

Identifying learners' practice gaps is a key component to providing meaningful CME as part of the continued professional development process. Knowing what the gaps are will drive both the development of learning objectives and the instructional design of the CME activity. In addition, if the gaps to be addressed are carefully chosen, they can also be used as part of the outcomes evaluation process to determine how effective the educational activity was.

Evaluation and Outcomes Measurement.

The post activity evaluation process should be used to critically analyze how effective the educational experience was in closing the identified learning gaps and whether this resulted in improvements in competence, performance and possibly health outcomes. This is the final step in completing the cycle of learning as depicted in the diagram below. This process will also enable planners to identify any shortcomings in the educational activity or barriers to implementing change that learners experienced and take steps to address these in future CME activities.
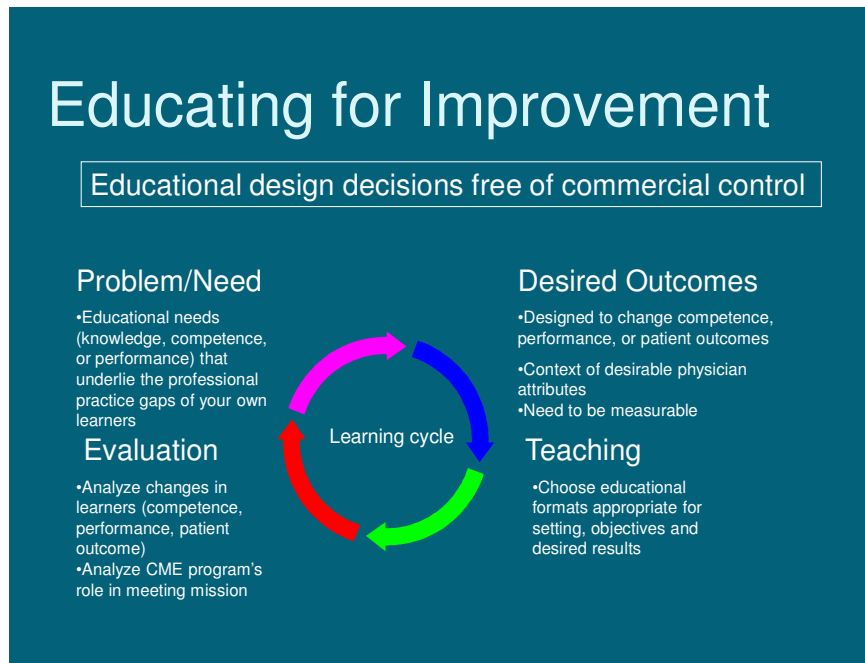
In addition to the usual information that asks participants to rate how the educational activity met their needs, an essential requirement of the evaluation process is a component aimed at determining how the activity might change the competence and/or performance of the participant or patient health outcomes if possible. There are 3 outcomes assessment models that have been identified by the COCME used for this process, including the following:

1. **Outcomes-Based Questions and Follow-up With Learners –** Specific outcomes-based questions are selected and asked of learners (or a sample of learners) related to (1) the AAP CME activity overall, (2) select sessions or articles within a CME activity, and/or (3) other educational endeavors associated with CME activities. The questions are asked separate from an evaluation, so learners may be identified with their responses for individual follow-up to occur at a later date post-activity.

2. **Case-based Pre/Posttest Questions –** Case-based questions related to the content are sent to learners before the activity, so learners' answers may be shared in advance of an activity with the faculty/authors and planners, enabling them to consider and refine their planned

content to address learners' extent of knowledge and their particular deficits. This process makes the content more directed at changing learners' competence. The same case-based questions are asked via a posttest of learners *immediately following* the CME activity to assess immediate change in learners' competence. At a point in time between 6 weeks and 6 months after the activity (e.g., "post posttest"), the same case-based questions are used to assess durability of change in learners' competence.

3. **Global Evaluation of Learning Activities –** For some CME activities, it may be logistically difficult to contact individual learners following their participation in AAP CME activities to assess learning outcomes. In these situations, specific questions may be asked as part of CME activity evaluations. Because the responses are not associated with individual learners, follow-up with learners to assess application to practice at a future date does not occur. In general, because there is no opportunity to conduct a post-activity follow-up of learners, this model should be used only when necessary.

Beyond the aforementioned outcomes measurement strategies, the COCME acknowledges there are many other ways through which planners may choose to assess learner change in competence, performance, or patient outcomes resulting from CME activities, and these should be explored based on the educational design of the CME activity.

Educating for Improvement

Educational design decisions free of commercial control

Problem/Need
•Educational needs (knowledge, competence, or performance) that underlie the professional practice gaps of your own learners

Evaluation
•Analyze changes in learners (competence, performance, patient outcome)
•Analyze CME program's role in meeting mission

Learning cycle

Desired Outcomes
•Designed to change competence, performance, or patient outcomes
•Context of desirable physician attributes
•Need to be measurable

Teaching
•Choose educational formats appropriate for setting, objectives and desired results

Needs Gaps Outcomes-COCME 6 12.doc

Samples of Problems/Gaps & Needs for Review

What is the Problem(s) that this activity addresses? (This is the Professional Practice Gap)	What do you need to provide to your learners in order to help them make a difference/solve this problem? Do they need factual information, an ability to incorporate, or an ability to perform in order for a positive change in the problem to occur? (This is the educational need in terms of Knowledge, Competence and/or Performance)	How did you determine the Problem and identify what your learners need to solve it? (This is your Needs Assessment Data)	What change should your learners make as a result of them attending this activity? (These are your Desired Results in terms of your activities ability to make a change in competence, performance or patients outcomes*) Please Note: You will need to measure whether or not you achieved these results with your evaluations
1) The Centers for Disease Control and Prevention (CDC) reports approximately 9 per 1,000 children in the United States are diagnosed with ASD. A contributing factor to this problem/gap: Physicians (our learners) do not know the neuro-anatomical locations and functions that correlate with common developmental disorders in children	**Knowledge** - Our learners need to know what the common developmental disorders in children are and the neuro-anatomical locations and functions that correspond with them.	**1)** Expert experience (query of course faculty, program committee members) **2)** IOM Reports: Reports on Mental Health, Early Brain Development **3)** CDC Reports: Learn the Signs Act Early Campaign, FASD	As a result of this activity, learners should be better able to identify the neuro-anatomical locations and functions of common developmental disorders in children.
2) Percentage increase from 1985 - 1999 in stimulant psychotropic drugs prescribed to children: 327% A contributing factor to this problem/gap: Physicians (our learners) do not consistently limit use of psychotropic medications to the appropriate conditions	**Competence** - Our learners need strategies to assist them in recognizing the appropriate conditions for which to prescribe psychotropic medications to pediatric patients **Performance** - Our learners need to limit their prescriptions of psychotropic medications to the appropriate pediatric patient population	**1)** AAP, Committee on Psychosocial Aspects of Child & Family Health and the Task Force on Mental Health. The future of pediatrics: mental health competencies for pediatric primary care. Pediatrics. 2009;124(1):410-421. **2)** AHRQ Reports: Depression Screening **3)** Prior DB:PREP participants commitment to change contracts	As a result of the implementation of strategic tools provided in this activity, learners should be better able to recognize the appropriate conditions for which to prescribe psychotropic medications to pediatric patients As a result of being better able to identify the appropriate pediatric patient population, learners should reduce the number of prescriptions for psychotropic medications

What is the Problem(s) that this activity addresses? (This is the Professional Practice Gap)	What do you need to provide to your learners in order to help them make a difference/solve this problem? Do they need factual information, an ability to incorporate, or an ability to perform in order for a positive change in the problem to occur? (This is the educational need in terms of Knowledge, Competence and/or Performance)	How did you determine the Problem and identify what your learners need to solve it? (This is your Needs Assessment Data)	What change should your learners make as a result of them attending this activity? (These are your Desired Results in terms of your activities ability to make a change in competence, performance or patients outcomes*) Please Note: You will need to measure whether or not you achieved these results with your evaluations
3) The Centers for Disease Control and Prevention (CDC) reports approximately 9 per 1,000 children in the United States are diagnosed with ASD. A contributing factor to this problem/gap: Physicians (our learners) do not always identify children with autism or other developmental disorders when they are encountered in clinical settings	**Knowledge** - Our learners need to know the appropriate signs/symptoms of autistism in pediatric patients		As a result of this activity, learners should be better able to identify the signs/symptoms of autistism in pediatric patients
	Competence - Our learners need strategies to incorporate autism screenings in their pediatric patient exams	**1)** Plauche Johnson C, Myers SM, Council on Children with Disabilities. Identification and evaluation of children with autism spectrum disorders. Pediatrics. 2007;120(5):1183-1215.	As a result of the implementation of strategic tools provided in this activity, learners should be able to increase their ability to incorporate autism screening tools in their pediatric patient exams
	Performance - Our learners need to more accurately diagnosis pediatric patients who present with signs of autism	**2)** AAP Policy Stmts/Clinical Guidelines: Developmental Screening and Surveillance, Task Force on Mental Health Report, Learning Disabilities, Autism Guidelines, ADHD Guidelines **3)** Prior DB:PREP participants commitment to change contracts	As a result of being better able to screen and identify autism, learners should increase the number of diagnosis for pediatric patients who present with these signs/symptoms
4) Among youth aged 12 to 17 in 2000, 9.7 percent had used an illicit drug within the 30 days	**Knowledge** - Our learners need to know the appropriate signs/symptoms of substance abuse in pediatric patients		As a result of this activity, learners should be better able to identify the signs/symptoms of substance abuse in pediatric patients

What is the Problem(s) that this activity addresses? (This is the Professional Practice Gap)	What do you need to provide to your learners in order to help them make a difference/solve this problem? Do they need factual information, an ability to incorporate, or an ability to perform in order for a positive change in the problem to occur? (This is the educational need in terms of Knowledge, Competence and/or Performance)	How did you determine the Problem and identify what your learners need to solve it? (This is your Needs Assessment Data)	What change should your learners make as a result of them attending this activity? (These are your Desired Results in terms of your activities ability to make a change in competence, performance or patients outcomes*) Please Note: You will need to measure whether or not you achieved these results with your evaluations
prior to interview, approximately 2.1 million youths aged 12 to 17 had used inhalants at some time in their lives as of 2000, and about 9.7 million persons aged 12 to 20 reported drinking alcohol in the month prior to the survey interview in 2000 (27.5 percent of this age group) with an estimated 6.6 million (18.7 percent) being binge drinkers and 2.1 million (6.0 percent) being heavy drinkers. A contributing factor to this problem/gap: Physicians (our learners) do not always adequately screen adolescent patients for or recognize clinical evidence for possible substance abuse	**Competence** - Our learners need strategies to incorporate substance abuse screenings in their pediatric patient exams	**1)** AAP Task Force on Mental Health. Enhancing Pediatric Mental Healthcare: Report from the AAP Task Force on mental Health. Pediatrics. 2010;125(supplement s):S69-S160.	As a result of the implementation of strategic tools provided in this activity, learners should be able to increase their ability to incorporate substance abuse screening tools in their pediatric patient exam
	Performance - Our learners need to more accuarately diagnosis pediatric patients who present with signs of substance abuse	**2)** DB:PREP Self-Assessments	As a result of being better able to screen and identify substance abuse, learners should increase the number of diagnosis for pediatric patients who present with these signs/symptoms
		3) Prior DB:PREP participants commitment to change contracts	
	Knowledge - Our learners need to know the appropriate signs/symptoms of developmental and behaviorial disorders in pediatric patients	**1)** Council on Children w/Disabilities, Section on Developmental Behavioral Pediatrics, Bright Future Steering Committee, Medical Home Iniatives for Children	As a result of this activity, learners should be better able to identify the signs/symptoms of developmental and behaviorial disorders in pediatric patients

What is the Problem(s) that this activity addresses? (This is the Professional Practice Gap)	What do you need to provide to your learners in order to help them make a difference/solve this problem? Do they need factual information, an ability to incorporate, or an ability to perform in order for a positive change in the problem to occur? (This is the educational need in terms of Knowledge, Competence and/or Performance)	How did you determine the Problem and identify what your learners need to solve it? (This is your Needs Assessment Data)	What change should your learners make as a result of them attending this activity? (These are your Desired Results in terms of your activities ability to make a change in competence, performance or patients outcomes*) Please Note: You will need to measure whether or not you achieved these results with your evaluations
5) Approximately 13% of children have a developmental disability, ranging from mild disabilities such as speech and language impairments to serious developmental disabilities, such as intellectual disabilities, cerebral palsy, and autism. A contributing factor to this problem/gap: Physicians (our learners) do not routinely screen for or recognize developmental and behavioral issues in their pediatric patients	**Competence** - Our learners need strategies to incorporate developmental and behaviorial screenings in their pediatric patient exams	with Special Needs. Identifying infants and young children w/developmental disorders in the medical home: an algorithm for developmental surveillance and screening. Pediatrics. 2006;118(1):405-420. **2)** AAP Task Force on Mental Health. Enhancing Pediatric Mental Healthcare: Report from the AAP Task Force on Mental Health. Pediatrics. 2010;125(supplement s):S69-S160.	As a result of the implementation of strategic tools provided in this activity, learners should be able to increase their ability to incorporate developmental and behaviorial screening tools in their pediatric patient exam
	Performance - Our learners need to more accuarately diagnosis pediatric patients who present with signs of developmental and behaviorial disorders	**3)** Practice needs QI efforts in DSS, Bright Futures **4)** ABP MOC Expectations: Content specifications for DB Pediatrics **5)** Performance Measures: ADHD **6)** Prior DB:PREP participants commitment to change contracts	As a result of being better able to screen and identify developmental and behaviorial disorders, learners should increase the number of diagnosis for pediatric patients who present with these signs/symptoms

What is the Problem(s) that this activity addresses? (This is the Professional Practice Gap)	What do you need to provide to your learners in order to help them make a difference/solve this problem? Do they need factual information, an ability to incorporate, or an ability to perform in order for a positive change in the problem to occur? (This is the educational need in terms of Knowledge, Competence and/or Performance)	How did you determine the Problem and identify what your learners need to solve it? (This is your Needs Assessment Data)	What change should your learners make as a result of them attending this activity? (These are your Desired Results in terms of your activities ability to make a change in competence, performance or patients outcomes*) Please Note: You will need to measure whether or not you achieved these results with your evaluations
6) Children's emotional or behavioral difficulties affect many aspects of their lives--achievement in school, relationships with family and friends, and the risk of alcohol or substance abuse. Early intervention and treatment may prevent a child's emotional or behavioral difficulties from worsening and lessen some of the negative outcomes associated with mental health problems. However, finding appropriate, affordable, and family-oriented treatment for children with emotional or behavioral difficulties is often a challenge. A contributing factor to this problem/gap: Physicians (our learners) do not always understand ways to effectively code and receive reimbursement for developmental and behavioral services, resulting in lack of incorporation of needed screening and counseling services in their practices	**Knowledge** - Our learners need to know the appropriate codes for reimbursement of developmental and behaviorial services	**1)** Previous activity evaluations: DB:PREP	As a result of this activity, learners should be better identify the appropriate codes for reimbursement of developmental and behaviorial services
	Competence - Our learners need strategies to incorporate correct coding procedures for developmental and behaviorial services into their practices	**2)** Critical Topics in Subspecialties: Coding for Developmental & Behaviorial Pediatrics (coming out in 2010), Early Brain Development/Literacy Promotion	As a result of the implementation of strategic tools provided in this activity, learners should be able to correctly code developmental and behaviorial services allowing for an increase in reimbursement amounts for these services
	Performance - Our learners need to increase the amount of patient screening/counsling referrals for pediatric patients who present/are diagnosed with developmental and behaviorial disorders		As a result of being better able to code and submit for developmental and behaviorial services, learners should increase the amount of screening/counseling referrals for pediatric patients who present/are diagnosed with these disorders

*Please note that if you expect to make a change in patient outcomes, please be specific in identifying what you expect that change in patients to be and note how you expect to measure the change (most commonly changes in patient outcomes are measured by a review of actual patient data in order to evaluate the change)

**Sample Patient Outcomes: As a result of this activity, increased screening and diagnosing of pediatrics patients with developmental and behaviorial disorders should lead to a decrease in long-term medication dependence in these patients. Attendees will conduct chart reviews prior and 6mos after the activity to document any increase in screenings and diagnosis.

What is the Problem(s) that this activity addresses? (This is the Professional Practice Gap)	What do you need to provide to your learners in order to help them make a difference/solve this problem? Do they need factual information, an ability to incorporate, or an ability to perform in order for a positive change in the problem to occur? (This is the educational need in terms of Knowledge, Competence and/or Performance)	How did you determine the Problem and identify what your learners need to solve it? (This is your Needs Assessment Data)	What change should your learners make as a result of them attending this activity? (These are your Desired Results in terms of your activities ability to make a change in competence, performance or patients outcomes*) Please Note: You will need to measure whether or not you achieved these results with your evaluations

Needs Assessment Guidelines / Sources

A needs assessment is a strategic planning tool for any learning activity. By knowing the learners' needs, you can incorporate knowledge, skills, and behavior content to improve performance and address gaps that may exist between actual performance and desired performance. The learning objectives should be based upon recognized needs.

The initial application should provide the following material on needs:

1. Document the process used to identify learning needs
2. State the needs that were identified and indicate how the assessment results will be applied to planning the educational activity
3. Include any data sources used for the needs assessment

Sources
Below is a sample list of sources/tools that can be used to determine the problems/gaps identified for your activity and what your learners need in order to address the problems/gaps.

Please note: Evaluations and surveys can be used in addition to, but not as the only source, to document the problem or what learners need to address the problem in your CME activity.

Specialty and Organizational Priorities
- AAP Agenda for Children (AAP strategic plan)/Child Health Priorities
- Critical Topics in Subspecialties (as posted on PediaLink/CME Finder – www.pedialink/org/cmefinder under "About AAP CME" / "Needs Assessment Sources")
- Specialty and subspecialty clinical practice guidelines and policy statements
- Evidence-based literature (e.g., *Pediatrics*)
- PREP® Self-assessment or Subspecialty Self-assessment data (e.g., poor performing PREP® Self-assessment questions, as posted on PediaLink/CME Finder – www.pedialink.org/cmefinder under "About AAP CME" / "AAP Continuing Medical Education" / "AAP Committee on Continuing Medical Education")
- AAP Annual Leadership Forum Resolutions
- Established expectations of the American Board of Pediatrics and Maintenance of Certification™ (www.abp.org)
- Initiatives identified by CME planning groups and editorial and advisory boards
- Preactivity surveys of learners or members (e.g., AAP sections/councils, target audience, Periodic Survey of Fellows)
- Updated or new information or research
- Outcomes measurement data - Analysis of outcomes measurement data from CME activities, such as:
  - Commitment to change contracts/data
  - Pre/post-CME activity test data
  - Responses from outcomes-based questions asked in CME activity evaluations
  - Barriers to change information cited by or identified about learners
  - Previous activity evaluations of the same or similar learner groups as your target audience

External Factors and New Developments
- Evidence from research-based literature or reports, such as
  - Agency for Healthcare Research and Quality [AHRQ] - www.ahrq.gov and www.ahrq.gov/child
  - Reports from the Centers for Disease Control and Prevention [CDC] - www.cdc.gov
  - Reports from the Institute of Medicine - www.iom.edu
  - Physician Consortium for Performance Improvement - www.physicianconsortium.org
  - Healthy People – www.Healthypeople.gov
- Evidence-based literature
- Updated or new information or research
- Expert experience
- Performance measures
- National databases or registries
- Public health initiatives
- Federal, state, and institutional mandates
- Other organizations' policy statements or clinical guidelines

Personal Assessments
- Self-assessments and personal reflection
- Peer reporting or review
- Regional and community issues or those issues related to the specific nature of the learner's practice
- Needs in one's practice
- Learner questions generated from live activities

Identification of Professional Practice Problems/Gaps, Needs & Desired Results
Each AAP activity should incorporate content that addresses at least 1 professional practice problems (gaps) of the learners you expect to attend your activity. *Consider:* In looking at the overall goal/purpose of your activity, what content/topic area has a problem/gap in professional practice that needs to be fixed? What problems are patients experiencing because physicians are or are not doing in practice? What problem or issue do children face that keeps occurring or has gotten worse? Is there something that children continue to suffer from or what problem will decrease because more pediatricians implement what you plan to teach?

Once this problem has been identified, you should determine what your learners "need" to address this issue (a knowledge need, a competence need or a performance need). *Consider:* What do physicians need to know, know how to do, or perform differently in their day to day practice that if you taught at this activity, and they implemented, could help address this issue?

Finally, now that you have identified a problem area that you want to address in this activity and you determined what your learners need to make a difference in this area, what do you hope to achieve by the end of your activity? *Consider:* What do you want your learners *to do differently* after participating in your activity that may make a difference to the problem that you identified? What do you want your learners to improve on or implement as a result of participating in your activity that will help them to achieve one of the needs you identified for your activity? Remember: you will need to identify a way to measure if these improvements occurred in your evaluation of the activity

Example: The <u>professional practice gap</u> *addressed in this activity is that more than 40% of children have tooth decay by the time they reach kindergarten making it the most chronic childhood disease in the United States and its treatment is one of the most prevalent unmet health needs in children.*

There are several <u>underlying needs</u> for pediatricians to be able to address this problem:
- *Pediatricians need to know current recommendations for screening, diagnosis and referral for oral and dental health diseases (this is a knowledge need)*
- *Pediatricians need to know how to develop strategies to provide anticipatory guidance and identify preventive approaches to maintain oral and dental health (this is a competence need)*
- *Pediatricians needs to perform an "oral health risk assessment" as part of a health maintenance visit and improve referrals (this is a performance need)*

The desired results of this CME activity is that after participating, our learners will become more aware of current recommendations for screening, diagnosis and referral for oral and dental health diseases which will enable them to be able to better provide anticipatory guidance and preventive approaches (demonstrating an increase in competence) to maintain the oral and dental health of pediatric patients. In addition, our learners should more routinely perform an oral health risk assessment (demonstrating an increase in performance) during pediatric health

Identification of Major Professional Practice Problems (Gaps) and Desired Results

The below table includes questions to consider in your planning process to help you identify the professional practice problems (gaps) of your learners, as well as the desired results of your activity.

	Professional Practice Problems (Gaps) Difference between actual and ideal performance and/or patient outcomes	Desired Results Desired results are "best practices;" what learners will apply and do differently in their practice as a result of the CME activity
Knowledge (factual information)	What necessary factual information do your learners not know? Do they need to identify or recognize something better?	
Competence (knowing how to do something)	What combination of knowledge, skills, and behavior is currently inconsistent among your learners? Are their strategies inconsistent, or do they need to better distinguish, differentiate, or predict something?	What new or additional strategies or abilities do you want your learners to be able to put into action? Do they need to recognize or integrate a diagnostic strategy or management modality or enhance their counseling techniques and communication?
Performance (what a physician actually does in practice)	What do your learners fail to do or do inconsistently in practice? Are they unable to perform something or some aspect of diagnosis or treatment, etc.?	How do you want your learners to modify their practice? Do you want them to use a particular diagnostic or management modality or stop using an outdated treatment?
Improved patient Outcomes		What improvements in patient outcomes do you expect to result from this CME activity?

Identifying professional practice problems (gaps) of your learners does not have to be complicated. Below are some practical strategies that may be employed in your CME activities.

- Ask faculty or authors to specifically identify one learner gap or discrepancy in practice for the topics they propose or articles they write.
- Ask CME registrants or subscribers to self-identify through an online survey a few months or weeks before an activity one clinical/practice-related question they would like the faculty or authors to address in their content. (Sampling and self-reported professional practice gaps are acceptable.)
- Ask your faculty to begin their presentations with a list of gaps or discrepancies related to their planned content and to end their presentations with a list of expected learner outcomes or suggested changes that can be made in practice.