

*Advancing Education in*

# **PRACTICE-BASED LEARNING & IMPROVEMENT**

An Educational Resource  
from the





# What is Practice-based Learning & Improvement?

## PRACTICE-BASED LEARNING & IMPROVEMENT

Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Residents are expected to:

- § analyze practice experience and perform practice-based improvement activities using a systematic methodology
- § locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
- § obtain and use information about their own population of patients and the larger population from which their patients are drawn
- § apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- § use information technology to manage information, access on-line medical information; and support their own education
- § facilitate the learning of students and other health care professionals<sup>1</sup>

## Other Perspectives on Practice-based Learning & Improvement

Practice-based Learning & Improvement (PBLI) is similar to “holding a mirror up to ourselves to document, assess, and improve our practice.”<sup>2</sup>

PBLI is “how you get better” at medicine.<sup>3</sup>

## PBLI Steps<sup>4</sup>

- § Monitor practice
- § Reflect on or analyze practice to identify learning or improvement needs
- § Engage in learning or plan improvement
- § Apply new learning or improvement
- § Monitor impact of learning or improvement

## References

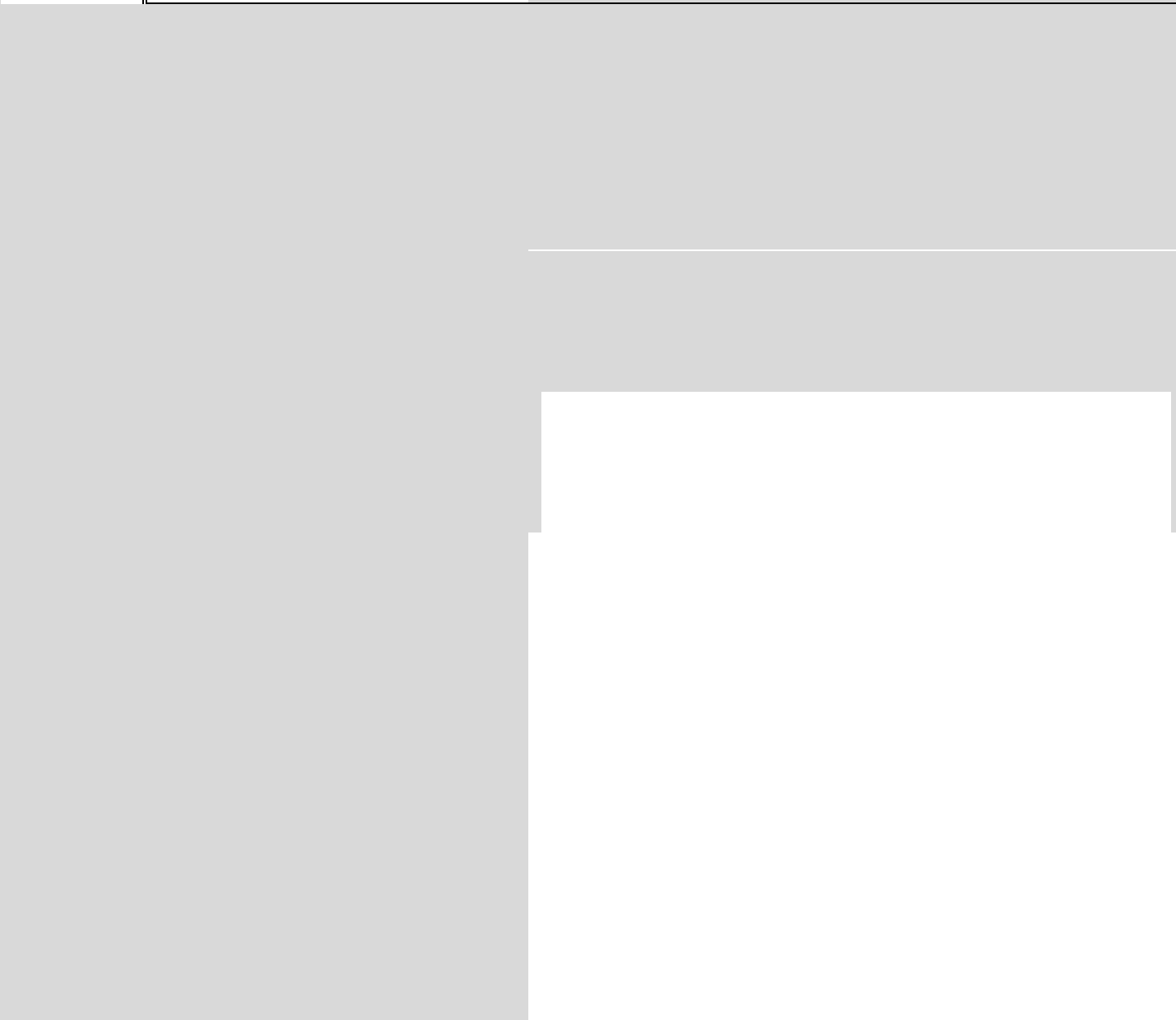
1. Accreditation Council for Graduate Medical Education. ACGME Outcome Project. Retrieved July 15, 2004, from [www.acgme.org/Outcome](http://www.acgme.org/Outcome).
2. Ziegelstein RC, Fiebach NH. “The Mirror” and “The Village”: a new method for teaching practice-based learning and improvement and systems-based practice. *Acad Med* 2004;79:83-8.
3. Gordon P, Tomasa L, Kerwin J. ACGME Outcomes Project: selling our expertise. *Fam Med* 2004;36:164-7.
4. Lynch DC, Swing SR, Horowitz SD, Holt K, Messer JV. Assessing Practice-



## There are a number of approaches to teach or foster Practice-based Learning & Improvement

Example	Description
<b>Exit Rounds</b> Arseneau R. Exit rounds: a reflection exercise. Acad Med 1995;70:684-7.	In a group session with the attending, each resident reviews a discharged patient for whom he/she was responsible and describes what was learned from caring for that patient.
<b>Mortality &amp; Morbidity Conference</b> Ziegelstein RC, Fiebach NH. "The Mirror" and "The Village": a new method for teaching practice-based learning and improvement and systems-based practice. Acad Med 2004;79:83-8.	An M&M case is assigned to each resident who analyzes the case in terms of his or her own practice behaviors that could be improved. The resident presents these issues during M&M conference.*
<b>Practice-based Small Group Learning Program</b> Foundation for Medical Practice Education (www.fmpe.org/en/programs/pb sg.html)	Residents meet to review current information about a specific clinical problem and to reflect on their experiences and challenges with it. Group discussion is stimulated by prepared material and led by a trained peer facilitator.
<b>Evidence-based Medicine Curriculum</b> Green ML, Ellis PJ. Impact of an evidence-based medicine curriculum based on adult learning theory. J Gen Intern Med 1997;12:742-50.	Residents rotate as leaders of a group session to discuss the application of EBM to one of their own patients. As preparation, residents develop a focused clinical question, conduct a literature search, critically appraise the evidence, and then apply it to the care of their own patients.
<b>Log and learning plan</b> Fung Kee Fung M, Walker M, Fung Kee Fung K, Temple L, Lajoie F, Bellamare G, Bryson SC. An internet-based learning portfolio in resident education: the KOALA™ multicentre programme. Med Educ 2000;34:474-9.	Working with a mentor, residents keep a log of significant events or clinical surprises and develop a plan to address learning needs revealed by these events.
<b>Improvement project</b> Lough JRM, Murray TS. Audit and summative assessment: a completed audit cycle. Med Educ 2001;35:357-63.	Residents work with a mentor to identify an aspect of their own practice that needs to be improved, implement the improvement, and determine its effectiveness during senior year.*

\*See pages 6 & 7 for more information about this approach

## Using Mortality and Morbidity Conference Cases to Foster and Assess Practice-based Learning & Improvement

Goal: To foster learners' abilities to self-monitor and reflect on their own work and initiate their own learning.

Learning Objectives:

1. Residents will be able to self-assess their work with a challenging case.
2. Residents will be able to check the accuracy of their self-assessments by consulting relevant literature and data and by obtaining feedback from knowledgeable teachers and peers.
3. Residents will be able to articulate personal learning points and a learning plan from their work with a c

## Using an Improvement Project to Foster and Assess Practice-based Learning & Improvement

Goal: To foster learners' abilities to improve their own practice of medicine

### Objectives:

1. Residents will be able to conduct a chart review of their patients to obtain information about their own practice.
2. Residents will be able to compare their own practice with best evidence.
3. Residents will be able to identify an intervention to improve their own practice.
4. Residents will be able to implement an intervention designed to improve their own practice.
5. Residents will be able to check the effect of improvement interventions.

### Learning Activity

1. A group facilitator (faculty) prepares information about practice improvement tools and discusses it during group discussions with residents. Sample topics include: rapid cycle testing, plan-do-study-act cycles, the use of flow and Pareto charts to monitor processes, and the use of control and specification charts to monitor outcomes.
2. The group facilitator guides discussion so that each resident designs an aim for his or her own improvement project.
3. During the planning phase of projects, each resident presents an evidence-based rationale for planned improvements and receives feedback from the group.
4. During the implementation phase of projects, each resident updates the group facilitator or a mentor on progress during one-on-one meetings.
5. The discussion group reconvenes after the improvement projects have been implemented and results collected. Residents present the results of their interventions.

### Assessment

1. The resident documents each step of the improvement project.
2. During a group seminar, the resident presents his or her improvement project to other residents and the group facilitator or mentor.
3. The group facilitator or mentor rates the written project using the PBLI improvement project checklist.

### How does this address PBLI?

- § Requires the resident to analyze a sample of his or her own practice.
- § Requires the resident to seek current information about the area targeted for improvement.
- § Requires the resident to implement an improvement intervention.
- § Requires the resident to examine the effects of the intervention on his or her own practice.

Note: Adapted from,  
Lough JRM, Murray TS. Au  
TwiOnimprovement.



## Practice-based Learning & Improvement Project and Checklist

### What is it?

The checklist is used to rate Practice-based Learning and Improvement (PBLI) projects completed by residents. The topic for a PBLI project is stimulated by resident awareness of a practice behavior that needs improvement. A complete project includes information about a practice behavior that was changed and data regarding the impact of the change.

### How may it be used?

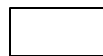
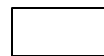
Raters review a PBLI project and use the checklist to document the extent to which a project meets the requirements specified in each item of the checklist. A check mark is placed in the "YES" column if the project meets the item specification. A check mark is placed in the "NO" column if the project does not meet the item specification.

### Benefits of this method

An improvement project can provide valid evidence of the ability to plan, implement, and check the impact of practice changes. The checklist has yielded reliable data especially if a second set of raters are used to rate projects that are not passed by initial raters.

### Disadvantages of this method

To complete the checklist, raters have to read the entire PBLI project. This may become time-consuming depending on the number of residents in the program.



# Self-directed Learning Portfolio Entry and Scoring Rubric

## What is it?

The portfolio entry consists of a cover letter and supporting documents such as case notes or journal material. In the cover letter, the resident describes a challenging case that prompted him or her to seek new information or learn new skills, the educational resources used, and how the documentation fits together to illustrate self-directed learning. If the new information or skills were applied to the case, the resident must describe the effect of this on the process or outcomes of patient care.

## How may it be rated?

Scoring rubrics are used to rate the quality of portfolio entries or contents. Rubrics are descriptions of criteria for specific levels of performance. The self-directed learning rubric describes six levels of evidence that demonstrate weak to strong self-directed learning abilities. The rater assesses the quality of the portfolio entry by selecting one of the six criteria best met by the entry.

## Benefits of this method

Portfolio entries are based on residents' practice experiences and require residents to reflect on and critically review their practice. This kind of portfolio entry can thus provide valid evidence of the ability to analyze practice. Reliable rating is enhanced by increasing the number of entries required per resident. Since portfolio contents are permanent products, they can be rated at times convenient to the rater. This also enhances the feasibility of checking inter-





# Learning Plan Rating Form

Resident: \_\_\_\_\_

Rotation: \_\_\_\_\_

Faculty: \_\_\_\_\_

Date: \_\_\_\_\_

Developing= Several behaviors performed inadequately or missed (ratings 1, 2, or 3)

Acceptable= Most behaviors performed acceptably (ratings 4, 5, or 6); acceptable performance is described below

Exemplary= All behaviors performed very well (ratings 7, 8, or 9)

	Developing			Acceptable			Exemplary			
	1	2	3	4	5	6	7	8	9	
1. Practice analysis				Provides brief description of significant event & response to it or describes pattern of practice behaviors/outcomes; explains reasons for response or pattern of responses; considers several variables in analysis including personal, team, environment equipment, & disease process; for personal variable explores cognitive issues such as confirmation bias						
2. Improvement opportunity	1	2	3	4	5	6	7	8	9	
				States what could be done differently; suggested improvement is related to significant event or pattern of practice behaviors/outcomes, is grounded in best evidence or current, accepted practice, & feasible						
3. Action plan				4	5	6	7	8	9	
				Articulates learning needs that are logically related to event or pattern of pattern of practice behaviors/outcomes; describes how & when learning needs will be met, what will comprise evidence of learning, what would aid learning, & likelihood of applying to practice						
4. Resources to support analysis & plan				4	5	6	7	8	9	
				Cites relevant, current literature, guidelines, best practices or data; referenced evidence demonstrates understanding of key issues & ability to use information technology						

Comments:

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PRACTICE-BASED LEARNING & IMPROVEMENT  
Web-based Resource Guide

ORGANIZATION	WHERE?
Agency for Healthcare Research and Quality	<a href="http://www.ahrq.gov">www.ahrq.gov</a>
American Academy of Family Practice	<a href="http://www.aafp.org/x16578.xml">www.aafp.org/x16578.xml</a>
American Academy of Pediatrics	<a href="http://www.eqipp.org">www.eqipp.org</a>
	<a href="http://www.abimfoundation.org/cpd/cpdhome/components.htm">www.abimfoundation.org/cpd/cpdhome/components.htm</a>
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