Recommended Curriculum Guidelines for Family Medicine Residents

Practice-Based Learning and Improvement

*This document was endorsed by the American Academy of Family Physicians (AAFP).*

**Introduction**

This Curriculum Guideline defines a recommended training strategy for family medicine residents. Topic competencies, attitudes, knowledge, and skills that are critical to family medicine should be attained through longitudinal experience that promotes educational competencies defined by the Accreditation Council for Graduate Medical Education (ACGME), [www.acgme.org](http://www.acgme.org). The curriculum must include structured experience in several specified areas. Most of the resident's knowledge will be gained by caring for ambulatory patients who visit the family medicine center. Structured didactic lectures, conferences, journal clubs, and workshops must be included in the curriculum, with an emphasis on outcomes-oriented, evidence-based studies that delineate common and chronic diseases affecting patients of all ages. Targeted techniques of health promotion and disease prevention are hallmarks of family medicine. Appropriate referral patterns and provision of cost-effective care should also be part of the curriculum.

Program requirements specific to family medicine residencies may be found on the ACGME website. Current AAFP Curriculum Guidelines may be found online at [www.aafp.org/cg](http://www.aafp.org/cg). These guidelines are periodically updated and endorsed by the AAFP and, in many instances, other specialty societies, as indicated on each guideline.

Each residency program is responsible for its own curriculum. *This guideline provides a useful strategy to help residency programs form their curricula for educating family physicians.*
Preamble

Practice-based learning and improvement (PBLI) has been a competency for all physicians in training since 2002. PBLI includes components of evidence-based medicine (EBM), systems-based practice (SBP), and performance improvement (PI).

- EBM is the integration of best clinical evidence with clinical expertise and patient values.
- SBP teaches physicians to utilize resources and provide resources to individual patients and others.
- PI focuses on continuous improvement in health care delivery.

This curriculum in PBLI trains family medicine residents to improve their own patient care practices using EBM, SBP, and PI.

Both PI and EBM offer an approach and a set of tools to the physician interested in improving clinical or administrative practices. Caring for patients and learning from the care provided are two integrated and ongoing processes that continue well beyond residency training.

More and more, physicians are being asked to help improve the quality of health care as part of a team comprised of non-physician health care professionals and non-medical support staff. Training and education in PI and EBM methodology will help physicians become effective members and leaders of those teams.

This Curriculum Guideline complements two other AAFP Curriculum Guidelines: Reprint No. 280 – Scholarly Activity and Information Mastery and Reprint No. 288 – Medical Informatics. Many of the attitudes, knowledge, and competencies in those two documents are integrated into PI and EBM. Medical information systems greatly enhance the ability of the physician to measure and improve performance and to access the best evidence available for medical decision making.

Competencies

At the completion of residency training, a family medicine resident should be able to:

- Demonstrate the ability to investigate and evaluate his or her care of patients (Patient Care, Practice-based Learning and Improvement)
- Identify strengths, deficiencies, and limits in his or her medical knowledge and expertise (Medical Knowledge, Practice-based Learning and Improvement)
- Appraise and assimilate scientific evidence (Medical Knowledge, Practice-based Learning and Improvement)
Continuously improve patient care on the basis of constant self-evaluation and lifelong learning (Systems-based Practice, Practice-based Learning and Improvement)

**Attitudes**

The resident should develop attitudes that encompass:

- Awareness that performance improvement (PI) tools and methods improve patient care
- A valuing of teamwork for PI initiatives
- Commitment to improving health care delivery
- Ongoing effort to identify the best evidence available for each clinical issue faced
- Understanding that the available evidence may not directly answer a clinical question
- Willingness to advocate for evidence-based care of patients

**Knowledge**

In the appropriate setting, the resident should demonstrate the ability to apply knowledge of:

1. The principles of evidence-based medical decision making
   a. Methods of rating evidence
   b. Basic statistical measures
   c. Quality of clinical trials
   d. Limitations of evidence-based medicine (EBM)

2. Sources of evidence-based medical literature
   a. Point-of-care tools providing filtered EBM information (e.g., Family Physicians Inquiries Network [FPIN] Clinical Inquiries, DynaMed, First Consult, UpToDate, Bandolier)
   b. Tools providing unfiltered information (e.g., MEDLINE)

3. Systems-based practice (SBP)
   a. Teams: formation, management, role as leader and facilitator
   b. Care coordination
   c. Cost-benefit analysis
   d. Patient advocacy
e. System consultant
f. System evaluator

4. History of medical quality improvement
   a. Medical errors and patient safety issues
   b. Review of previous quality improvement project outcomes
   c. American Board of Family Medicine (ABFM) requirements for continuous performance improvement activities to maintain certification
   d. Quality improvement resources: The Joint Commission (TJC), Institute for Clinical Systems Improvement (ICSI), Institute for Healthcare Leadership, Institute for Healthcare Improvement (IHI), American Academy of Family Physicians (AAFP), Institute of Medicine (IOM), Occupational Safety and Health Administration (OSHA)

5. Deming’s PDSA Cycle of continuous quality improvement, including the FOCUS-PDSA model
   a. Find, Organize, Clarify, Understand, Select (FOCUS)
      i. Find an opportunity for improvement through discussion with process participants
      ii. Organize key players, select leader, and agree on a mission statement
      iii. Clarify current understanding of the process
      iv. Understand what the team is trying to improve; identify measurable outcomes; study variance and perform root-cause analysis
      v. Select a strategy for continued improvement or a part of the process to change
   b. Plan, Do, Study, Act (PDSA)
      i. Plan – Identify one small improvement to the process; establish goals and intended outcomes
      ii. Do – Implement the process and collect data for analysis
      iii. Study – Assess the impact of improvements
      iv. Act – If successful, implement the change on a broader scale. If not, reevaluate the process and changes made, and determine whether to try a different approach.

6. Performance improvement (PI) tools
   a. Traditional Deming-style tools
      i. Pareto charts, run charts, statistical process control charts, scatter diagrams, flowcharts, cause-and-effect (Ishikawa) diagrams, control charts, bar charts
b. Toyota-style/Lean tools
   i. Process maps
   ii. A3 diagrams
   iii. 5 Whys
   iv. Visual controls
      1) 5S system (sort, straighten, shine, standardize, sustain)
      2) Kanbans

7. Role of information systems and informatics in performance improvement
   a. Sources of data/information
      i. External organizations: National Committee for Quality Assurance (NCQA), Institute for Healthcare Improvement (IHI), Institute of Medicine (IOM), The Joint Commission (TJC)
      ii. NCQA Healthcare Effectiveness Data and Information Set (HEDIS) criteria
      iii. Centers for Medicare & Medicaid Services (CMS, formerly Health Care Financing Administration [HCFA]) peer review organizations (PRO)
      iv. Patent accounting systems
      v. Health plan reports
      vi. Hospital data systems
      vii. External sources (e.g., county health departments, peer review organizations)
   b. Use of information systems in process redesign
      i. Electronic health records that follow the four rules of work design
      ii. Patient registries for chronic disease management

Skills

Residents are expected to develop skills and habits to be able to meet the following goals:

- Use PI methodology to identify a clinical process, analyze practice, and implement change, with a goal of performance improvement
- Coordinate team-based care
- Locate, appraise, and assimilate evidence from scientific studies in order to improve patient care
- Utilize resources and provide resources to patients in clinical practice
Implementation

Implementation of this practice-based learning and improvement (PBLI) Curriculum Guideline should be longitudinal throughout the resident’s training experience, with increasing emphasis in the latter half of the residency program. Conferences and other teaching activities should integrate the core PBLI topics. Residents must also gain an awareness of community/cultural resources needed for sustained improvement. Implementing the PBLI curriculum provides an opportunity for interdisciplinary work in both inpatient and outpatient settings. Residents may also partner with external resources to ensure that PBLI is valid to their own practice and to those with whom they are practicing. For resident quality improvement projects to be successful, barriers and strengths must be fully explored in order to best understand needs and move forward. With this background, the resident should have hands-on experience leading at least one performance improvement initiative during the three years of training. Improvement projects based in collaboration with clinic staff and quality management professionals in the community (e.g., family medicine center [FMC], hospital, community at large) will provide paths to PBLI competency.

Resources


Website Resources

Agency for Healthcare Research and Quality. www.ahrq.gov


Cochrane Library (subscription required). www.thecochranelibrary.com

Dartmouth Biomedical Libraries. Evidence-Based Medicine (EBM) Resources. www.dartmouth.edu/~biomed/resources.html/guides/ebm_resources.shtml

Evidence Based Medicine Toolkit. www.ebm.med.ualberta.ca/

Family Practice Management. www.aafp.org/fpm/

Institute for Clinical Systems Improvement. www.icsi.org/

Institute for Healthcare Improvement. www.ihi.org

National Association for Healthcare Quality: www.nahq.org


Occupational Safety and Health Administration. Safety and Health Topics. www.osha.gov/SLTC/

The Joint Commission. www.jointcommission.org/


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