AMERICAN ACADEMY OF FAMILY PHYSICIANS

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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. Attitudes, behaviors, 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. The family medicine curriculum must include structured experience in several specified areas. Much of the resident's knowledge will be gained by caring for ambulatory patients who visit the family medicine center, although additional experience gained in various other settings (e.g., an inpatient setting, a patient's home, a long-term care facility, the emergency department, the community) is critical for well-rounded residency training. The residents should be able to develop a skillset and apply their skills appropriately to all patient care settings.

Structured didactic lectures, conferences, journal clubs, and workshops must be included in the curriculum to supplement experiential learning with an emphasis on outcomes-oriented, evidence-based studies that delineate common diseases affecting patients of all ages. Patient-centered care and targeted techniques of health promotion and disease prevention are hallmarks of family medicine and should be integrated into all settings. Promoting an understanding of health disparities, social determinants of health, and translating these concepts of health equity into clinical practice should be a part of the practice-based learning and improvement curriculums. Appropriate referral patterns, transitions of care, and the 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. 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 has been a competency for all physicians in training since 2002. Practice-based learning and improvement includes components of evidence-based medicine, systems-based practice, and quality improvement and performance improvement.

- Evidence-based medicine is the integration of the best clinical evidence from available medical research with clinical expertise and patient values.
- Systems-based practice teaches physicians to utilize and provide resources to help individual patients and others.
- Quality improvement and performance improvement focuses on quality and continuous improvement in health care delivery.

This curriculum in practice-based learning and improvement trains family medicine residents to improve their own patient care practices using evidence-based medicine, systems-based practice, and quality improvement and performance improvement.

Both evidence-based medicine and quality improvement and performance improvement offer an approach and a set of tools to physicians 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 provided to patients. They are often part of a team comprised of physicians, non-physician health care professionals, and medical and non-medical support staff. Training and education in quality improvement and performance improvement and evidence-based medicine methodology will help physicians become effective members and leaders of their health care 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 quality improvement and performance improvement and evidence-based medicine. 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 the care of patients (Patient Care, Practice-based Learning and Improvement)
- Identify strengths, deficiencies, and limits in medical knowledge, expertise, and how those factors impact the care of patients (Medical Knowledge, Practice-based Learning and Improvement)
- Appraise and assimilate scientific evidence and its applicability to clinical practice (Medical Knowledge, Practice-based Learning and Improvement)
- Demonstrate understanding of health disparities and social determinants of health (SDoH) and apply that knowledge to patient care (Patient Care, Practice-based Learning and Improvement, System-based Practice)
- Continuously improve patient care on the basis of constant self-evaluation and integrative lifelong learning (Systems-based Practice, Practice-based Learning and Improvement)

Attitudes and Behaviors

The resident should demonstrate attitudes that encompass:

- Awareness that quality improvement and performance improvement tools and methods improve patient care
- Promotion of teamwork, including quality improvement and performance improvement initiatives
- Commitment to improve health care delivery using evidence-based medicine
- Identify the best evidence available for each clinical issue faced
- Learn about, work within, and seek to improve the system(s) when engaged in patient care and career development
- Understand the available evidence may not directly answer a clinical question and may require interpretation and application
- Advocate for evidence-based care of patients from all socioeconomic and cultural backgrounds
- Understand health care disparities and the impact of SDoH on patient care

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

2. Sources of evidence-based medical literature
    a. Point-of-care tools providing filtered evidence-based medical information (e.g., Family Physicians Inquiries Network [FPIN] Clinical Inquiries, DynaMed, First Consult, UpToDate, Essential Evidence Plus)
    b. Tools providing unfiltered information (e.g., MEDLINE)
    c. Institutional resources and guidelines for quality improvement: 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)

3. Systems-based practice
    a. Teams: formation, management, role as leader and facilitator
        i. Teaming tool: Tuckman's five stages of teaming: Forming, Storming, Norming, Performing, Transforming/Adjourning
        ii. Seeking out opportunities to engage in teams in both inpatient and outpatient settings
            1) Running mock codes and other simulation sessions
            2) Serving as "doctor of the day"
    b. Care coordination
    c. Cost-benefit analysis
    d. Patient systems evaluator and consultant
    e. Patient-centered care
    f. Cultural competency
    g. Patient advocacy
    h. Understand sexual orientation and gender specific issues, along with lesbian, gay, bisexual, transgender, questioning, asexual (LGBTQA) designations and community-specific health issues
    i. Construct evidence-based care plans that incorporate patients' beliefs

4. Collaborate in performance improvement efforts
    a. Participation in Practice-based Research Networks (PBRNs)

b. Incorporation of Community-based Participatory Research (CBPR)

c. Multidisciplinary involvement with physicians and non-physician health professionals in both family medicine and other disciplines

5. Improving patient safety across the continuum of care

   a. Develop an understanding of medical quality improvement and its history

   b. Identify and evaluate adverse events, errors, and harm

   c. Prevent harm in inpatient and outpatient settings

   d. Prevent diagnostic errors in inpatient and outpatient settings.

   e. Coordinate care among care settings

   f. Transitions in patient care (i.e., hand-over process, team communication)

6. Deming's Plan, Do, Study, Act (PDSA) cycle of continuous quality improvement, including the Find, Organize, Clarify, Understand, Select (FOCUS)-PDSA model

   a. FOCUS model
      i. *Find* an opportunity for improvement through discussion with process participants
      ii. *Organize* key players, select a 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. PDSA model
      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.

7. Performance improvement 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. Root-cause analysis (fish bone diagram, 5 Why's)
iv. Visual controls
    1) 5S system (sort, straighten, shine, standardize, sustain)
    2) Kanbans

8. 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)
        viii. Strengths and weakness of various data sources and variety in quality in metrics
    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
    c. Leveraging Informatics for coding, billing, and reimbursement
        i. Value-based purchasing (VBP)
        ii. Merit-based Incentive Payments System (MIPS)
        iii. Appropriate outpatient clinic visit coding, billing, and documentation

Skills

In the appropriate setting, the resident should demonstrate the ability to independently perform or appropriately refer the following:

- Use performance improvement 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 and provide resources to patients in clinical practice
- Engage in transparent discussions addressing performance improvement
- Solicit, assess, and incorporate feedback
- Participate in the disclosure of patient safety events in real and/or simulated interprofessional clinical patient safety activities

Implementation

- Implementation of the Practice-based Learning and Improvement 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 formal educational activities should integrate the core practice-based learning and improvement topics.
- Residents must also gain an awareness of community/cultural resources needed for sustained improvement.
- Implementing the practice-based learning and improvement curriculum provides an opportunity for interdisciplinary work in both inpatient and outpatient settings.
- Residents may also partner with external resources to ensure that practice-based learning and improvement is applicable 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, challenges, and resources to move forward.
- With this background, the resident should have hands-on experience leading at least one quality improvement and performance improvement initiative during the resident's 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 practice-based learning and improvement competency.
- Quality improvement activities should include activities aimed at identifying pertinent SDoH and reducing health care disparities.

Resources

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Website Resources

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

American Academy of Family Physicians. The Medical Home. www.aafp.org/quality

American Board of Family Medicine. Maintenance of Certification, Part IV–Performance in Practice. www.theabfm.org/moc/part4.aspx

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

Dartmouth Biomedical Libraries. Evidence-Based Medicine. www.dartmouth.edu/~biomed/resources.htmld/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

National Guideline Clearinghouse. www.guidelines.gov

New York Academy of Medicine. Evidence-based Health Care. www.nyam.org/fellows-grants/sections-workgroups/evidence-based-health-care/

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

The Joint Commission. www.jointcommission.org/

University of Washington (UW) Health Science Libraries. Evidence-based Practice. https://guides.lib.uw.edu/hsl/ebp

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