



Recommended Curriculum Guidelines for Family Medicine Residents

Occupational Medicine

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

Introduction

Each family medicine residency program is responsible for its own curriculum. The AAFP Commission on Education's Subcommittee on Graduate Curriculum has created this guide as an outline for curriculum development, and it should be tailored to the needs of the program.

Through a series of structured and/or longitudinal experiences, the curricula below will support the overall achievement of the core educational competencies defined by the Accreditation Council for Graduate Medical Education (ACGME) and provide guideposts to program requirements specific to family medicine. For updates and details, please refer to the ACGME website at www.acgme.org. Current AAFP Curriculum Guidelines may be found online at www.aafp.org/cq. These guidelines are periodically updated and endorsed by the AAFP and, in many instances, other specialty societies, as indicated on each guideline.

Preamble

Occupational and environmental health is the area of family medicine dedicated to preventing and managing occupational and environmental injury, illness, and disability and promoting the health and productivity of workers, their families, and communities. Family physicians' significant role concerning occupational health is to ensure effective prevention and appropriate management of work-related injury and illness.

When prevention is unsuccessful, family physicians should be aware of individual circumstances and occupational requirements with sensitivity toward inclusion and equity. The family physician's goals should be to provide comprehensive care to the injured or sick worker, including rehabilitation and return to employment.

In addition to training in the prevention, treatment, and rehabilitation of workers, residents should be trained to assist employers in maintaining a safe and productive work environment. More than half of American workers are employed by companies with fewer than 50 employees, and most employment locations do not have a full-time occupational physician on site. Therefore, family physicians are frequently involved in caring for and treating patients who sustain occupational injuries and illnesses.

Integration of a patient's occupational history into the standard history and physical examination assists clinicians in holistic care. Family physicians may be involved in pre-employment assessments and periodic follow-up examinations as requested by patients or employers. Family physicians should be comfortable treating common occupational injuries and preventing reoccurrence when injuries occur. Social and cultural differences between employers and employees can influence how patients integrate medical care into their own lives and family systems.

This curriculum guideline outlines the patient care and medical knowledge that should be among the objectives of training programs in family medicine. It provides a framework to prepare future family physicians to provide optimal care to patients who incur work-related illnesses, injuries, or disabilities.

Patient Care

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

- 1) Diagnose
 - a) Perform an occupational history
 - b) Perform a job-specific physical examination
 - c) Order and interpret appropriate employer- or regulatory-directed drug and alcohol tests
 - d) Determine causal assessment (work-relatedness)
 - e) Conduct an impairment and disability assessment
- 2) Manage industrial-related health care problems
 - a) Appropriate community/workplace protection
 - b) Treatment of hazards of the workplace
 - c) Rehabilitation programs
 - i) Drugs
 - ii) Alcohol
 - iii) Psychological
 - iv) Musculoskeletal
 - v) Vocational
 - d) Basic laceration repair techniques and foreign-body removal
 - e) Joint injections, strapping techniques, and other applicable techniques
 - f) Manage eye injuries
 - g) Manage pregnancy and pre-pregnancy issues
 - h) Evaluate patient with a specific chemical exposure
 - i) Determine fitness to return to work

- j) Counsel patients and employers about workplace safety
- k) Write and manage the activity prescription in injury and illness care (work restrictions)

3) Recognize the need for appropriate work-related injury management, including investigation (e.g., workplace and non-workplace habits and activities); drug and alcohol use screenings, when indicated; treatment; and further consultation, when indicated (Patient Care, Medical Knowledge)

Medical Knowledge

In the appropriate setting, a family medicine resident should demonstrate the ability to apply knowledge of the following:

1. The relationship of the physician delivering occupational care to:
 - a. Employees
 - b. Employers
 - c. Community members
 - d. Other health care professionals, including consultants
 - e. Workers' compensation and third-party administrators
 - f. Legal representatives
 - g. Government agencies
2. Ethics and the role of the physician as:
 - a. Company representative
 - b. Workers' health advocate
 - c. Medical ombudsman
 - d. Medical recorder
3. Preplacement testing and examinations
 - a. General
 - b. Job-specific
4. Periodic health assessments and surveillance examinations, as necessary
5. Impairment and disability determination
6. Organ-related occupational illnesses
 - a. Lung diseases
 - i. Occupational asthma
 - ii. Pneumoconiosis
 - iii. Infectious
 - b. Renal and urologic diseases
 - c. Skin diseases
 - i. Primary irritant dermatitis
 - ii. Allergic sensitizers
 - iii. Photosensitizers

- d. Liver diseases
- e. Hemopoietic disorders
- f. Neurological and special senses
- g. Eye trauma and irritation
- h. Ear (e.g., noise-induced hearing loss)
- i. Radiculopathy
- j. Peripheral neuropathy
 - i. Systemic
 - ii. Compression or entrapment (e.g., carpal tunnel syndrome, cubital tunnel syndrome)
- k. Occupational exposures and pregnancy
- l. Musculoskeletal disorders
 - i. Postural/positional
 - ii. Other orthopedic problems
 - 1) Spinal conditions
 - 2) Shoulder/rotator cuff injuries
 - 3) Epicondylopathy (e.g., tennis elbow, golfer's elbow)
 - 4) Wrist problems
 - a) Tendonitis
 - b) Instability
 - 5) Trigger digit
 - 6) First dorsal compartment tenosynovitis (e.g., De Quervain's tenosynovitis)
 - 7) Knee/meniscal injuries
 - 8) Ankle and foot injuries
 - iii. Trauma
 - 1) Acute
 - 2) Cumulative

7. Jobsite related

- a. Occupational hazards and exposures
 - i. Allergens
 - ii. Animals
 - iii. Barotrauma
 - iv. Burns
 - v. Electromagnetic fields
 - vi. Eye injuries
 - vii. Heavy metals
 - viii. Hepatitis
 - ix. HIV infections
 - x. Infections
 - xi. Noise
 - xii. Pesticides and herbicides
 - xiii. Radiation and radon
 - xiv. Sharp tools and dangerous machinery
 - xv. Blood-borne pathogens
 - xvi. Solvents, noxious gases, and inhalants, such as formaldehyde

- xvii. Thermal effects
- xviii. Tuberculosis
- xix. Violence
- xx. Zero gravity effects
- b. Temporal issues
 - i. Violence
 - ii. Extended hours
 - iii. Shift work
 - iv. Chronic fatigue
- c. Ergonomics
 - i. Repetitive trauma
 - ii. Workstation problems
- d. Prevention
 - i. Education
 - ii. Work environment modification
- e. Awareness of the potential benefits/implications of early return to duty and/or transitional duty for both the patient and employer

8. Psychosocial problems in the industry

- a. Employee assistance programs
- b. Stress and burnout in the workplace
- c. Concerns regarding disasters (e.g., fire, explosion, terrorism)
- d. Harassment
- e. Substance use disorders
 - i. Alcohol
 - ii. Tobacco
 - iii. Prescription drugs
 - iv. Illegal drugs
- f. Mental illness

9. Epidemiology, demographics, and basic statistics

- a. Effects of obesity and insulin resistance
- b. Special concerns of migrant workers
- c. Effects of aging and associated functional decline

10. Legal issues in occupational medicine

- a. Occupational Safety and Health Administration (OSHA)
- b. National Institute for Occupational Safety and Health (NIOSH)
- c. Workers' compensation statutes
- d. Americans with Disabilities Act (ADA)
- e. Effects of collective bargaining agreements

11. Effects of over-the-counter and prescribed medication on job performance

12. Prior injuries or illnesses which may impact care for new or recurrent work-related injuries or illnesses

Interpersonal and Communication Skills

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

- Be aware of individual clinician's attitudes and personal and family experiences related to the roles of employees and employers, and the potential implications of these attitudes and experiences on the therapeutic relationship
- Facilitate physician, employee, and employer partnerships to enhance the therapeutic patient relationship and reduce the potential for conflicts in promoting and maintaining optimal health in the workplace
- Communicate with stakeholders in a compassionate, knowledgeable manner and address prevention, treatment, and rehabilitation issues for the employee and employer (Interpersonal and Communication Skills)
- Demonstrate sensitivity to cultural beliefs and values, family dynamics, and social support
- Support patients through injury recovery and rehabilitation, including the potential need for long-term care and inability to maintain gainful employment (Interpersonal and Communication Skills, Systems-based Practice)
- Respect and compassion for psychosocial dynamics that influence human behavior and the employee-employer relationship

Systems-Based Practice

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

- Coordinate ambulatory and inpatient care across health care professionals, employers, and governmental agencies (Systems-Based Practice)
- Optimize treatment plans based on knowledge of occupational and rehabilitation resources, including local, state, and federal agencies (Systems-Based Practice, Practice-Based Learning and Improvement)
- Coordinate integration of employer-sponsored wellness programs to maximize opportunities for preventative care, including immunizations, laboratory screening, and lifestyle counseling (Patient Care, Systems-Based Practice)
- Investigate individual occupational needs, offer advice on prevention, provide treatment, and design rehabilitation plans that consider the patient's social, cultural, and employment needs (Systems-Based Practice, Practice-Based Learning and Improvement)

Practice-Based Learning and Improvement

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

- Use self-directed learning to further knowledge and competency in occupational health
- Be aware of the importance of a multidisciplinary approach to enhancing individualized and recognizing the contribution of all team members to learning

Professionalism

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

- Demonstrate sensitivity to and knowledge of the emotional impact of work-related injuries (Patient Care, Professionalism)
- Provide reasonable and appropriate recommendations for activity prescriptions (work restrictions) for acute or recurrent work-related injuries or illnesses (Professionalism, Medical Knowledge)
- Provide timely medical recommendations to stakeholders involved in the management of work-related injuries or illnesses (Professionalism, Interpersonal and Communication Skills)

Implementation

Family medicine residents should have exposure to occupational medicine during outpatient, inpatient, urgent, and emergency care experiences. Longitudinal exposure is best accomplished within the residency through outpatient management of work-related injuries or illnesses.

Family medicine resident exposure may be enhanced during specialty rotations, including orthopedics, rheumatology, dedicated occupational medicine, and physical medicine and rehabilitation. These experiences should include diagnostic assessments and medical decision-making regarding safely returning injured workers to employment. Collaboration with other specialists, employers, and insurers is often an important component of optimal medical care for injured workers. Guidelines may be established on a longitudinal basis or with an intense, in-depth experience, utilizing family physicians and other residency program faculty.

Resources

Bepko J, Mansalis K. Common occupational disorders: asthma, COPD, dermatitis, and musculoskeletal disorders. *Am Fam Physician*. 2016;93(12):1000-1006.

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Levy BS, Wegman DH, Baron SL, Sokas RK. *Occupational and Environmental Health*. 7th ed. OEM Press; 2017.

Rom WN, Markowitz S, eds. *Environmental and Occupational Medicine*. 5th ed. Lippincott Williams & Wilkins; 2006.

Silver JK, Gilchrist LS. Cancer rehabilitation with a focus on evidence-based outpatient physical and occupational therapy interventions. *Am J Phys Med Rehabil*. 2011;90(5 Suppl 1):S5-S15.

Taiwo OA, Mobo BH Jr, Cantley L. Recognizing occupational illnesses and injuries. *Am Fam Physician*. 2010;82(2):169-74.

Walker Jr B, Adenuga B, Mouton C. The relevance of occupational medicine to primary care in the 21st century. *J Natl Med Assoc.* 2011;103(4):306-312.

Website Resources

ACOEM Basic Occupational Health Guides. <https://acoem.org/Practice-Resources/Basic-Occupational-Health-Guide>

American College of Occupational and Environmental Medicine (ACOEM). www.acoem.org

American Family Physician (AFP) by Topic: Occupational Health. www.aafp.org/afp/topicModules/viewTopicModule.htm?topicModuleId=89

American Medical Association (AMA) Guides Digital. <https://ama-guides.ama-assn.org/>

National Institute for Occupational Safety and Health (NIOSH). www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA). www.osha.gov/

Official Disability Guidelines (ODG). www.mcg.com/odg/

Reed Group MD Guidelines. www.mdguidelines.com/

Developed 11/1984 by Presbyterian Intercommunity Hospital Family Medicine Residency Program

Revised 10/1990

Revised 07/1996

Revised 06/2002

Revised 03/2008

Revised 07/2013 by Mount Carmel Family Medicine Residency Program

Revised 07/2017 by University of Alabama at Birmingham (UAB) Huntsville Family Medicine Residency

Revised 09/2021 by University of Nevada, Reno, University of Nevada School of Medicine