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Recommended Curriculum Guidelines for Family Medicine Residents

HIV Infection/AIDS

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 in all settings. 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.

Please note that the term “manage” occurs frequently in AAFP Curriculum Guidelines. “Manage” is used in a broad sense to indicate that the family physician takes responsibility for ensuring that optimal, complete care is provided to the patient. This does not necessarily mean that all aspects of care need to be directly delivered personally by the family physician. Management may include appropriate referral to other health care providers, including other specialists, for evaluation and treatment.

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

The pandemic of human immunodeficiency virus (HIV) infection is of vital concern to family physicians and the diverse populations they serve. The basic tenets of family medicine emphasize a compassionate, whole-person approach to patient care, the application of specific knowledge and skills to a wide variety of disease entities, and a comprehensive and continuous commitment to patients and their families. Drawing on these core tenets, family physicians are well-suited to play an important role in the care of HIV-infected individuals, from screening and prevention to HIV primary care and antiretroviral management. This is particularly true now that care of HIV-positive individuals has evolved into a chronic disease model for the majority of patients. Family physicians should be knowledgeable about the multiple issues related to care of patients who have HIV and develop skills to stay abreast of new developments.

These guidelines are intended to assist in the development of an HIV/AIDS curriculum for family medicine residencies. Because the knowledge base related to HIV/AIDS changes rapidly, family physicians must also be aware of the resources available to maintain updated information and skills.

Competencies

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

- Recognize HIV risk factors and counsel patients about primary and secondary HIV prevention, risk reduction, testing, diagnosis, and treatment (Medical Knowledge)
- Counsel all patients—even those not identified as at risk for HIV—about the Centers for Disease Control and Prevention (CDC) recommendation for one-time HIV screening for all individuals ages 13 to 64 (Patient Care, Interpersonal and Communication Skills)
- Recognize the signs and symptoms of acute HIV and know how to diagnose this clinical condition (Medical Knowledge)

- Disclose an HIV diagnosis to a patient and immediately link the patient to ongoing care; this includes knowing the barriers patients who have HIV face connecting with and staying in care (Patient Care, Interpersonal and Communication Skills, Systems-Based Practice)
- Synthesize an appropriate management plan for conditions associated with HIV infection (Patient Care, Medical Knowledge)
- Create a treatment plan based on current governmental and non-governmental agency HIV care guidelines (i.e., Department of Health and Human Services [DHHS] and Infectious Diseases Society of America [IDSA], respectively) (Medical Knowledge)
- Communicate effectively with patients to ensure a clear understanding of the HIV diagnosis and the ensuing plan of care (Interpersonal and Communication Skills)
- Recognize one's own practice limitations and seek consultation from other health care professionals and resources as needed to provide optimal patient care (Professionalism, Systems-based Practice)
- Understand the legal, ethical, and social contexts of HIV and their impact on the care of special populations. It is important for the resident to understand the stigma, lack of knowledge, and misinformation about HIV/AIDS that exist in the community in which they work, including among other health care professionals. (Professionalism)
- Recognize preventive care, including health screening and counseling, required for HIV-positive patients and how this care may differ from recommended preventive care for the general population (Medical Knowledge)

Attitudes and Behaviors

The resident should demonstrate attitudes and behaviors that encompass:

- Awareness of the importance of the physician's own attitudes toward sexuality, injection drug use, cultural differences, and communicable diseases
- Willingness to obtain a thorough sexual history
- Willingness to obtain a thorough substance abuse history
- Compassion, objectivity, and an understanding of the importance of quality-of-life issues when dealing with patients who have a chronic and potentially life-threatening illness
- Recognition of one's professional abilities and limitations, and recognition of when specialist consultation is needed
- Willingness to coordinate medical and non-medical services and embrace the role of patient advocate
- Recognition of the importance of support for the patient from family members and others

- Acceptance of the physician's continuing responsibility to support the patient and family throughout all stages of the illness
- Awareness of the importance of setting a positive example for other health care professionals and the community by caring for patients who may be stigmatized
- Awareness of community and cultural attitudes toward HIV and the need for confidentiality, as well as the ability to help with HIV disclosure if it is requested by the patient

Knowledge

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

1. General considerations
 - a. Scientific background
 - i. HIV virology and pathophysiology
 - ii. Immunodeficiency manifestations and complications
 - iii. Epidemiology
 - 1) Local, regional, national, and global prevalence and incidence
 - 2) Disproportionate prevalence in minorities, adolescents, women, and people living in poverty in the United States
 - 3) Increasing prevalence in men who have sex with men (MSM)
 - 4) Impact of co-infection with other sexually transmitted infections (STIs) and hepatitis B and C
 - iv. Modes of transmission
 - 1) Unprotected/condomless sexual contact
 - 2) Injection drug use
 - 3) Vertical transmission from mother to child (e.g., intrauterine, intrapartum, postpartum, breastfeeding)
 - 4) Other exposure to human body fluids (e.g., exposure to blood and blood products, needlesticks), including occupational (i.e., health care setting) and non-occupational exposures to HIV
 - b. Definitions
 - i. CDC HIV classification
 - c. Laboratory testing
 - i. Type of test
 - 1) Fourth generation antibody/antigen chemiluminescent immunoassay (CIA) done via venipuncture
 - 2) Rapid testing (blood spot and oral swab)
 - 3) Confirmatory tests: nucleic acid amplification (HIV RNA PCR)
 - 4) CD4+/T cell lymphocyte counts
 - 5) Viral load (HIV RNA PCR)

- 6) The role and types of viral resistance testing (not including test interpretation, unless the resident aims to manage antiretroviral therapy [ART] independently)
 - ii. Indications for HIV testing
 - 1) Risk assessment and recommendations for voluntary testing
 - a) Universal prenatal testing recommendations per the CDC and U.S. Preventive Services Task Force (USPSTF)
 - b) One-time routine screening for all patients ages 13 to 64
 - 2) Clinical assessment
 - a) Acute HIV infection
 - b) Asymptomatic chronic HIV infection
 - c) Symptomatic chronic HIV infection
 - d) Non–life-threatening infections, clinical manifestations, and symptoms suggestive of HIV infection
 - e) AIDS-defining illnesses
 - 3) Public health surveillance/reporting to local and state health departments
 - iii. Test results and counseling
 - 1) CDC recommendations for universal “opt-out” consent policy
 - 2) Verbal consent, when required by state law
 - 3) Post-test counseling, when feasible and clinically appropriate
 - 4) Confidentiality issues
 - 5) Public health case reporting (required in all states)
 - 6) Partner notification/use of local department of public health and CDC Partner Services program
 - d. “Test and treat” model: importance of linkage to care and retention in care
 - e. Prevention of transmission
 - i. Importance of condom use, and safer sex and injection practices
 - ii. Decreased transmission with undetectable viral load
 - iii. Availability of and indications for pre-exposure prophylaxis (PrEP)
2. Clinical manifestations
- a. HIV as a chronic disease
 - i. Role of chronic inflammation due to HIV infection and the associated increased risk for cardiovascular, renal, bone, and HIV-associated neurologic disease
 - ii. Increased risks for non–HIV-associated malignancies
 - iii. Caring for other chronic health conditions in individuals living with HIV (i.e., diabetes, asthma, chronic obstructive pulmonary disease [COPD], hypertension, mental illness)
 - b. Hepatitis co-infection: hepatitis A (higher risk for MSM), B, and C (also higher risk for MSM and faster disease progression in patients who have HIV)
 - c. Other STIs
 - d. Opportunistic infections: oral, esophageal, and cutaneous candidiasis; *Pneumocystis jiroveci* pneumonia; cryptococcosis; cryptosporidiosis;

histoplasmosis; cytomegalovirus infections (CMV); herpes simplex and herpes zoster; non-tuberculous mycobacteria (NTM) infection; *Mycobacterium tuberculosis*; toxoplasmosis; recurrent bacterial infections; progressive multifocal leukoencephalopathy (PML)

- e. AIDS-defining malignancies (e.g., cervical cancer, Kaposi sarcoma, non-Hodgkin lymphoma) and HIV-associated malignancies (e.g., vulvar, vaginal, and anal dysplasia and neoplasia)
- f. Other HIV syndromes: HIV encephalopathy, HIV-associated dementia, HIV-associated nephropathy, anemia, leukopenia, immune thrombocytopenic purpura, pancytopenia, thrombotic thrombocytopenic purpura, HIV wasting syndrome, hypogonadism, peripheral neuropathy, acute and chronic inflammatory demyelinating polyneuropathies, lipodystrophy, lipoatrophy, metabolic syndrome

3. Treatment and patient care issues

- a. Pharmacologic management (focus on basic principles of antiretroviral management); selection of ART should be done by, or in consultation with, an HIV-specialist physician or other health care professional trained to manage HIV independently
 - i. Assessment of viral load, baseline resistance, and immune function
 - ii. Antiretroviral drug classes
 - iii. Initiation of antiretroviral therapy
 - iv. Antiretroviral adherence counseling
 - v. Familiarity with preferred antiretroviral regimens per the DHHS guidelines (see <https://aidsinfo.nih.gov/>)
 - vi. Review of patient medication lists for drug-drug interactions
 - vii. Monitoring of regimen effectiveness, side effects, and toxicity, and understanding of how to define treatment failure or success
 - viii. Understanding of when and how to ask for help to change the care plan after treatment failure, which may or may not include a different ART regimen
 - ix. Assessment of adherence barriers and understanding of how to work together with the patient and the rest of the care team to overcome these barriers
- b. Local housing support services
- c. Close collaborative relationships with HIV- and non-HIV-specialist consultants needed for the care of each patient
- d. Preventive health care maintenance and recommended immunizations
- e. Prophylaxis against common opportunistic infections (OIs)
- f. Discontinuation of primary and secondary prophylactic therapy after immune recovery
- g. Understanding of and familiarity with manifestations of the immune reconstitution inflammatory syndrome (IRIS)

- h. Treatment recommendations during pregnancy (peripartum and postpartum periods)
 - i. Availability of non–U.S. Food and Drug Administration (FDA)-approved treatments and clinical trials
4. Psychosocial and ethical issues
- a. Physician responsibility and patient abandonment
 - b. “Comfort care only” orders versus more sophisticated advance directives (e.g., physician orders for life-sustaining treatment [POLST] or medical orders for life-sustaining treatment [MOLST] forms)
 - c. Individual rights versus societal rights
 - d. Confidentiality and documentation
 - e. Substance abuse; psychiatric co-morbidities
 - f. Sexual practices and orientation; gender identification
 - g. Patient competency determination, conservatorship, and durable power of attorney, including power of attorney for health care decisions
 - h. Impact of family: family resources and contributions
 - i. Stigma
 - j. Disclosure issues
5. Legal issues
- a. Confidentiality of medical records (Health Insurance Portability and Accountability Act [HIPAA] protections)
 - b. Disclosure of HIV status to third parties, such as employers or other health care professionals
 - c. State laws regarding HIV disclosure
 - d. Testing by employers and health insurers
6. Financial considerations
- a. Eligibility criteria for Medicare, Medicaid, Social Security, and other services
 - b. Available funding for health care and medications
 - i. Ryan White title funding, including AIDS drug assistance programs (ADAP)
 - ii. Coverage for individuals with private insurance
 - iii. Available pharmaceutical patient assistance programs (PAPs)
7. Special considerations for health care professionals
- a. Occupational risks and occupational post-exposure prophylaxis (PEP) for exposure to HIV
 - b. Specific psychosocial and ethical issues

- c. Impairment and work-related disability
- d. PEP protocols and treatment recommendations
- e. PrEP: identifying at-risk patients, counseling, appropriate PrEP prescribing, and follow-up

Skills

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

1. Evaluate
 - a. Take patient's sexual and substance use history and perform risk factor assessment
 - b. Perform a comprehensive physical examination
 - c. Select appropriate diagnostic procedures
 - d. Interpret the results of HIV testing (rapid and serologic)
 - e. Investigate common symptoms (e.g., fever, cough, diarrhea)
 - f. Recognize life-threatening conditions
 - g. Know the baseline tests needed for newly diagnosed HIV patients, such as complete blood count (CBC); basic metabolic panel (BMP); liver function tests (LFTs); fasting lipid profile (FLP); toxoplasmosis IgG; CMV IgG; and serologies for hepatitis A virus (HAV) IgG or total Ab, hepatitis B virus (HBV) sAb/cAb/sAg, and hepatitis C virus (HCV) Ab. In addition, know tests recommended annually (or more frequently, if indicated by risk): PPD or Quantiferon-TB Gold; syphilis IgG or rapid plasma reagin (RPR); cervical Pap smear; anal Pap smear for MSM or women who have cervical dysplasia (recommended by some sources but not the DHHS); urinalysis (UA); FLP; and HCV Ab (for high-risk MSMs or intravenous drug users [IDUs]).
2. Prevent
 - a. Provide health education and prevention counseling
 - b. Counsel HIV-positive individuals and contacts regarding risk of HIV transmission
 - c. Consult with community groups and lead group discussions about risks of HIV transmission
 - d. Perform prenatal HIV testing for all women
 - e. Provide HIV prevention counseling to high-risk groups
 - f. Provide PrEP with antiretroviral medications
3. Manage

- a. Formulate a problem list and prioritize a management plan
 - b. Provide ART personally (if sufficiently trained) or in consultation with an HIV specialist
 - c. Utilize and coordinate appropriate consultants and resources
 - d. Coordinate ambulatory, inpatient, and long-term care
 - e. Counsel patients and significant others appropriately about testing and test results, therapeutic modalities, and prognosis
 - f. Provide competent palliative/end-of-life care
 - g. Manage occupational and non-occupational HIV exposure per CDC/U.S. Public Health Service (USPHS) guidelines
4. Involve the community
 - a. Interact with and assume leadership in medical, social, and political communities
 - b. Provide education about HIV in medical, social, and other settings (e.g., middle schools, high schools, colleges, churches, other community agencies)
 5. Use online resources to obtain current HIV/AIDS treatment guidelines

Implementation

Within the capabilities of the residency program, the implementation of this Curriculum Guideline is best achieved with supplementation from outside resources, when necessary. Residents should have the basic knowledge and skills to care for their own patients appropriately and to serve as a community resource for information about HIV-related issues. Any training efforts must also strive to maintain an up-to-date curriculum that includes recent medical advances.

Precise details of implementation may vary among residency programs, depending on interest levels, geographic location, and the frequency of contact with HIV-positive patients.

Resources

Test Positive Aware Network (TPAN). The 20th annual HIV drug guide. *Positively Aware*. March-April 2016. [http://positivelyaware.com/sites/default/files/Positively_Aware_20th_annual_HIV_Drug_Guide_\(2016\).pdf](http://positivelyaware.com/sites/default/files/Positively_Aware_20th_annual_HIV_Drug_Guide_(2016).pdf). Accessed May 2, 2017.

Test Positive Aware Network (TPAN). HIV 101: A practical guide to living healthier with HIV. *Positively Aware*. September-October 2011. http://www.positivelyaware.com/archives/2011/11_06/pdfs/11_06.pdf. Accessed May 2, 2017.

Websites Resources

AIDS Education and Training Center (AETC) National Resource Center.
www.aidsetc.org

AIDSinfo. www.aidsinfo.nih.gov

American Academy of Family Physicians. www.aafp.org

American Academy of HIV Medicine. <http://aahivm.org>

American Medical Association. www.ama-assn.org

Centers for Disease Control and Prevention. www.cdc.gov

HIV Medicine Association (HIVMA). <http://hivma.org>

HIVQUAL-US. www.hivqualus.org

International Antiviral Society–USA (IAS-USA). www.iasusa.org

National Prevention Information Network (NPIN). HIV/AIDS.
www.cdcnpin.org/scripts/hiv

National Quality Center (NQC). www.nationalqualitycenter.org

Stanford University. HIV Drug Resistance Database. <http://hivdb.stanford.edu>

Test Positive Aware Network (TPAN). www.tpan.com

University of California, San Francisco Clinician Consultation Center.
www.nccc.ucsf.edu

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Revised 11/2009 by Family Medicine Residency of Idaho and Lancaster General Hospital

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