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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 skill set 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.

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 core 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 diseases; 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 people living with HIV, from screening and prevention to HIV primary care and antiretroviral management. This is particularly true now as care of people living with HIV has evolved into a chronic disease model for the majority of patients. Family physicians should be knowledgeable about the multiple issues related to HIV patient care and develop skills to stay abreast of new developments.

These guidelines are intended to assist in the development of an HIV/ acquired immunodeficiency syndrome (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 being at risk for HIV, about the Centers for Disease Control and Prevention (CDC) recommendation for one-time HIV screening for all individuals aged 13-64 (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 them to ongoing care, including knowing the barriers people living with HIV face connecting 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 collaborative governmental and non-governmental agency HIV care guidelines (i.e., U.S. Department of Health and Human Services [DHHS] and Infectious Diseases Society of America) (Medical Knowledge)

- Communicate effectively with patients to ensure a clear understanding of their HIV diagnosis and the ensuing plan of care (Interpersonal Communication Skills)
- Recognize one's own practice limitations and seek consultation from other health care providers and resources as needed to provide optimal patient care to people living with HIV (Professionalism, Systems-based Care)
- Understand the legal, ethical, and social context of HIV and its impact on the care of communities. It is important for the resident to understand the stigma, lack of knowledge, and misinformation about HIV/AIDS that exist in the settings where they are working, including among health care professionals (Professionalism)
- Deliver preventive care, including health screening and counseling, required for people living with HIV and understand how this may differ from recommendations for the general population (Medical Knowledge)

Attitudes

The resident should demonstrate attitudes 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 of patients
- Willingness to obtain a thorough substance abuse history of patients
- Compassion, objectivity, and 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, limitations, and 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 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 providers and the community by caring for patients who may be stigmatized
- Awareness of community and cultural attitudes toward HIV and the need for confidentiality and assistance with HIV disclosure when requested by the patient

Knowledge

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

1. General considerations
    a. Scientific background
        i. HIV virology and pathophysiology
        ii. Immunodeficiency manifestations and complications
        iii. Epidemiology
            1) Local, regional, national, global prevalence, and incidence
            2) Disproportionate prevalence in minorities, adolescents, transgender women, and people living in poverty in the U.S.
            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 especially for receptive sex partners
            2) Injection drug use
            3) Vertical transmission from mother to child (e.g., intrauterine, intrapartum, postpartum, breast-feeding)
            4) Other exposure to human body fluids (e.g., blood and blood products, needlesticks, etc.), including occupational (health care setting) and non-occupational exposures to HIV
    b. Definitions
        i. CDC's HIV classification
    c. Laboratory testing
        i. Type of test
            1) Fourth generation antibody/antigen chemiluminescent assay (CIA) done via venipuncture
            2) Rapid testing (bloodspot and oral swab)
            3) Confirmatory tests: Nucleic acid amplification (HIV ribonucleic acid [RNA] polymerase chain reaction [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 CDC and U.S. Preventive Services Task Force (USPSTF)
                b) One-time routine screening for all patients ages 15-65 as per USPSTF and AAFP guidelines
                c) Annual screening in populations with high risk behaviors (i.e., intravenous drug user [IVDU], multiple sex partners, MSM, etc.)
            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 where required by state law
3) Post-test counseling where 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"

d. "Test and Treat" – importance of linkage to care and retention in care

e. Prevention of transmission
i. Importance of condom use, safer sex, and injection practices
ii. "U=U" (i.e., undetectable viral load on ART = untransmittable to sexual partners)
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 persons living with HIV (i.e., diabetes, asthma, COPD, hypertension, mental illness)

b. Hepatitis co-infection – A (higher risk for MSM), B and C (also higher risk in MSM and faster disease progression in HIV patients)

c. Other sexually transmitted infections (STIs)

d. Opportunistic infections: oral, esophageal, and cutaneous candidiasis; *pneumocystis jirovecii* pneumonia (PCP); cryptococcosis; cryptosporidiosis; histoplasmosis; cytomegalovirus infections (CMV); herpes simplex and herpes zoster; non-tuberculous mycobacterial infection (MAC); mycobacterium tuberculosis; toxoplasmosis; recurrent bacterial infections; progressive multifocal leukoencephalopathy (PML)

e. AIDS-defining malignancies (e.g., cervical cancer, Kaposi's sarcoma, and non-Hodgkin's 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; osteoporosis; immune thrombocytopenic purpura; pancytopenia; thrombotic thrombocytopenic purpura;

HIV-wasting syndrome; hypogonadism; peripheral neuropathy; acute and chronic inflammatory demyelinating polyneuropathies; lipodystrophy; lipoatrophy; and 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 provider 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. Reviewing patient medication lists for drug-drug interactions
        vii. Monitoring regimen effectiveness, side effects, toxicity, and understanding how to define treatment failure or success
        viii. Asking for help in changing the care plan after treatment failure, which may or may not include a different ART regimen
        ix. Assessing adherence barriers and working together with the patient and 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 syndrome (IRIS)
    h. Treatment recommendations during pregnancy; peripartum and postpartum periods
    i. Availability of non-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 on 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 those with private insurance
        iii. Available pharmaceutical patient assistance programs (PAPs)

7. Special considerations for health care providers
    a. Occupational risks and occupational post-exposure prophylaxis for exposure to HIV
    b. Specific psychosocial and ethical issues
    c. Impairment and work-related disability
    d. Post-exposure prophylaxis (PEP) protocols and treatment recommendations
    e. Pre-exposure prophylaxis (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. Evaluation

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 (fever, cough, diarrhea)
f. Recognize life-threatening conditions
g. Know the baseline tests needed for newly diagnosed HIV patients (e.g., complete blood count [CBC], basic metabolic panel [BMP], liver function tests [LFTs], fasting lipid profile [FLP]); toxoplasmosis IgG, cytomegalovirus (CMV) IgG, hepatitis A virus (HAV) IgG or total Ab, HBV sAb/cAb/sAg and HCV Ab serologies, as well as those recommended regularly (frequency defined by risk): purified protein derivative (PPD) or Quantiferon gold; Syphilis IgG or rapid plasma reagin (RPR); cervical Pap smear; anal Pap smear for MSM or women with cervical dysplasia (recommended by some sources but not the DHHS); urinalysis (UA); fasting lipid protein (FLP); HCV Ab (if intravenous drug user [IDU] or high-risk MSM)

2. Prevention

a. Provide health education and prevention counseling
b. Counsel patients living with HIV and contacts regarding risk of HIV transmission and power of suppressive ART to prevent sexual HIV transmission
c. Consult with community groups and lead group discussions about risks of HIV transmission
d. Perform routine prenatal HIV testing
e. HIV prevention counseling for high-risk groups
f. Provide pre-exposure HIV prophylaxis with antiretroviral medications

3. Management

a. Formulate a problem list and prioritize a management plan
b. Provide ART 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 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/USPSTF guidelines

4. Community involvement
    a. Interact with and assume leadership in medical, social, and political communities
    b. Provide education about HIV in medical, social, and other settings, such as middle schools, high schools, colleges, churches, and community agencies
5. Use online resources to obtain current HIV/AIDS treatment guidelines

Implementation

Within the capabilities of the residency program, the implementation of these curriculum guidelines is best achieved with supplementation from outside resources, when necessary.

Residents should have the basic knowledge and skills to care appropriately for their own patients 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 patients living with HIV.

Websites Resources

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

AIDSMEDS. www.aidsmeds.com

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 Medical Association (HIVMA). http://hivma.org

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

National Institutes of Health (NIH) – AIDSinfo. www.aidsinfo.nih.gov

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

Center for Quality Improvement and Innovation – HIV Care.
www.nationalqualitycenter.org

POSITIVELY AWARE. Journal of the Test Positive Aware Network (TPAN).
www.positivelyaware.com/

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

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

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

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