HIV Medicine Core Curriculum
Learning Objectives

2003

Overview of HIV Infection
Approach to the Patient With HIV
Clinical Manifestations of HIV Infection
Principles of Antiretroviral Therapy
Research Issues
The Core Curriculum

Since 2000, the American Academy of HIV Medicine has assembled a panel of over 50 of the nation’s leading frontline clinicians, academics, and other experts in the field of HIV medicine to generate and update the Core Curriculum. The original Core Curriculum, drafted in 2001, consisted of more than 250 educational objectives, across five general topics and 50 subtopics, that an HIV health care provider should achieve in order to be considered an HIV Specialist.

The Core Curriculum faculty convened again in late 2002 for the first annual revision. This updated Core Curriculum, more streamlined and reorganized, still contains over 200 Learning Objectives that represent the minimum critical knowledge a frontline HIV health care provider should have to be considered an HIV Specialist.

Within this list of Learning Objectives, more than 30 objectives are highlighted with arrows. These Recent Learning Objectives contain very recent knowledge, especially that acquired in the past year, that a provider needs to be up-to-date in HIV medicine.

2003 Core Curriculum Faculty

Chair: Charles Farthing, MD
Bisher Akil, MD
Brady Allen, MD
Jean Anderson, MD
Roberto Arduino, MD
Dawn Averitt
John A. Bartlett, MD
Stephen Becker, MD
Marvin Belzer, MD
Robert Bolan, MD
Stephen Boswell, MD
David Butcher, MD
Rafael E. Campo, MD
Calvin Cohen, MD
Judith Currier, MD
Eric S. Daar, MD
Edwin DeJesus, MD, FACP
Judith Feinberg, MD
Richard Ferri, PhD, ANP
Gerald Friedland, MD
Joel Gallant, MD, MPH
Joseph Gathe, MD
Marla J. Gold, MD
Howard Grossman, MD
W. David Hardy, MD
Keith Henry, MD
Charles Hicks, MD
R. Scott Hitt, MD
Peter Katsufrakis, MD, MBA
Mark H. Katz, MD
Thomas Kerrihard, MD
Ann Khalsa, MD
Edward King, MA
Alan M. Kurz, MD
Alexandra Levine, MD
Stan Louie, PharmD
Andrew Luber, PharmD
Martin Markowitz, MD
Jeanne Marrazzo, MD, MPH
Henry Masters III, MD
W. Christopher Mathews, MD
John Mellors, MD
Melanie Moore, MA
Robert Munk, PhD
Robert L. Murphy, MD
Glen Pietrandoni, RPh
Melvin Pohl, MD
Frank Rhame, MD
Renslow Sherer, MD
David Simpson, MD
Kate Squires, MD
John Stansell, MD
Douglas Ward, MD
Diana Williamson, MD
# Table of Contents

The AAHIVM Self-Directed HIV Medicine Education Program ........................................... 4
About the American Academy of HIV Medicine............................................................. 4

## PART I: OVERVIEW OF HIV INFECTION
1 Epidemiology .................................................................................................................. 5
2 Pathogenesis and Classification ....................................................................................... 5
3 Transmission ....................................................................................................................... 5
4 Detection and Diagnosis .................................................................................................. 5

## PART II: APPROACH TO THE PATIENT WITH HIV
5 History ............................................................................................................................... 6
6 Physical Examination ......................................................................................................... 6
7 Laboratory Evaluation ........................................................................................................ 6
8 Symptoms/System Evaluation ........................................................................................... 6
9 HIV Testing and Counseling ............................................................................................. 6
10 Health Maintenance ......................................................................................................... 6
11 Prevention Education ....................................................................................................... 7
12 Care Settings/Modalities ................................................................................................. 7
13 Pain Management ............................................................................................................ 8
14 Special Populations .......................................................................................................... 8
15 Psychosocial and Economic Issues .................................................................................. 9
16 Complementary and Alternative Medical Approaches ............................................... 9
17 Systems-Based Practice ................................................................................................. 10
18 Palliative Care and End-of-Life Support ....................................................................... 10
19 Legal Issues .................................................................................................................... 10

## PART III: CLINICAL MANIFESTATIONS OF HIV INFECTION
20 Acute HIV Infection ........................................................................................................ 11
21 Chronic HIV Infection .................................................................................................... 11
22 Opportunistic Infections ................................................................................................. 11
23 Malignancies and Neoplasms ......................................................................................... 11
24 Dermatologic Complications ......................................................................................... 12
25 Dental/Oral and ENT Complications ........................................................................... 12
26 Endocrine Disorders ...................................................................................................... 12
27 Gynecologic Complications .......................................................................................... 13
28 Respiratory Complications ........................................................................................... 13
29 Psychiatric and Neurologic Complications .................................................................. 13
30 Gastrointestinal and Hepatobiliary Complications ..................................................... 13
31 Ocular Complications ................................................................................................... 14
32 Hematologic Complications ......................................................................................... 14
33 Cardiac Complications .................................................................................................. 14
34 Renal Complications ..................................................................................................... 14
35 Musculoskeletal Complications .................................................................................... 14
36 Sexually Transmitted Diseases ...................................................................................... 15

## PART IV: PRINCIPLES OF ANTIRETROVIRAL THERAPY
37 Initiation ......................................................................................................................... 16
38 Specific Agents ................................................................................................................. 16
39 Combination Therapy ..................................................................................................... 17
40 Monitoring ....................................................................................................................... 17
41 Modifying Therapy ......................................................................................................... 17
42 Investigational Antiretrovirals ....................................................................................... 18
43 Pregnancy ......................................................................................................................... 18
44 Hepatic and Renal Impairment ...................................................................................... 19
45 Adherence Issues ........................................................................................................... 19
46 Complications of Treatment ......................................................................................... 19
47 Post- and Preexposure Prophylaxis .............................................................................. 19
48 Immune-Based Therapies .............................................................................................. 20

## PART V: RESEARCH ISSUES
49 Research Design and Analysis ...................................................................................... 21
50 Drug Development and Expanded Access .................................................................... 21
51 Ethical Issues in Performing HIV Research ................................................................. 21

## INDEX OF RECENT LEARNING OBJECTIVES
........................................................................................................................................... 22

© 2003 by the American Academy of HIV Medicine. All rights reserved. Printed in the USA.
The AAHIVM Self-Directed HIV Medicine Education Program

The Core Curriculum is part of the larger Self-Directed HIV Medicine Education Program established by the Academy. This program also includes the HIV Medicine Self-Directed Study Guide, in which the Academy has compiled the clinical and research data needed to address each Learning Objective in the Core Curriculum. The Study Guide is also an effective self-assessment tool by providing continuing education post-testing and credit. To recognize HIV medical providers who have up-to-date knowledge, the Academy has created a credentialing process to recognize HIV Specialists, which includes the HIV Medicine Credentialing Examination, based heavily on the Recent Learning Objectives identified in the Core Curriculum.

The Core Curriculum, HIV Medicine Self-Directed Study Guide, and HIV Medicine Credentialing Examination are unique educational tools designed to assist a wide array of educational efforts. Private practices, medical groups, specialty organizations, and other institutions can use these tools to help their members keep up with recent changes in HIV knowledge, to help increase the quality of HIV care through comprehensive HIV educational programs, and to recognize those with knowledge of critical issues in HIV medicine. In this way, the Academy continues to work toward improving the quality of HIV care and increasing access to that care.

About the American Academy of HIV Medicine

The American Academy of HIV Medicine is an independent organization of HIV Specialists and others dedicated to promoting excellence in HIV/AIDS care. Through advocacy and education, the Academy is committed to supporting health care providers in HIV medicine and to ensuring better care for those living with AIDS and HIV disease.

The Academy is working to improve the quality of HIV care, and to increase access to that care, in many ways:

The Academy has helped improve the quality of HIV care by …

- Establishing a national standard of care through its Core Curriculum, a list of more than 200 Learning Objectives updated annually that together define the minimal knowledge needed to qualify as an HIV Specialist
- Creating and sustaining an HIV Specialist credentialing process to recognize HIV medical providers who possess up-to-date knowledge of HIV care
- Providing vital tools for HIV medical providers, including patient handouts, conference listings, and practice management information
- Organizing advocacy and educational efforts for HIV medical care providers at national and state levels
- Centralizing critical educational resources and assembling and continually updating a study guide containing clinical and factual data for the entire Core Curriculum
- Maintaining a national searchable listing of HIV health care providers and credentialed HIV Specialists at its Website (www.aahivm.org) to link HIV patients to qualified providers
- Continuing to work to ensure the viability of HIV practices in maintaining and expanding access to health care
- Lowering entry barriers into the field through various programs, including the creation of a national Job Bank specifically for professionals in HIV care
## PART I: OVERVIEW OF HIV INFECTION

### Chapter 1: Epidemiology

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L.1 DEMOGRAPHIC TRENDS</strong></td>
<td>Describe current demographic trends in HIV disease in the United States, especially regarding gender, sexuality, race/ethnicity, age, injection drug use, and socioeconomic status.</td>
</tr>
<tr>
<td><strong>L.2 PREVALENCE</strong></td>
<td>Discuss the global prevalence and geographic distribution of HIV-1 and HIV-2 infection, including HIV-1 clades/subclades.</td>
</tr>
</tbody>
</table>

### Chapter 2: Pathogenesis and Classification

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L.3 PREDICTIVE FACTORS</strong></td>
<td>Demonstrate knowledge of the factors predictive of HIV disease progression, including host factors that can result in differences in progression and how to communicate this concept to patients.</td>
</tr>
<tr>
<td><strong>L.4 VIRAL REPLICATION</strong></td>
<td>Discuss the HIV life cycle in the human body and the CD4+ cell, monitoring of CD4 count and HIV viral load, and HIV replication kinetics, for patient and community education settings.</td>
</tr>
<tr>
<td><strong>L.5 AIDS DEFINITION</strong></td>
<td>Describe the CDC definition of AIDS.</td>
</tr>
</tbody>
</table>

### Chapter 3: Transmission

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L.6 MODES</strong></td>
<td>Explain the modes of sexual and nonsexual transmission of HIV and their relative risks in a manner appropriate for educating patients, the community, and team members about HIV risk and prevention.</td>
</tr>
<tr>
<td><strong>L.7 UNSUSTANTIATED MODES</strong></td>
<td>Describe the evidence against unsubstantiated HIV transmission modes (e.g., mosquito-borne transmission).</td>
</tr>
<tr>
<td><strong>L.8 SUPERINFECTION</strong></td>
<td>Discuss the evidence for the possibility of superinfection/reinfection of an HIV+ patient by another strain of HIV, and its implications for patient education/management.</td>
</tr>
</tbody>
</table>

### Chapter 4: Detection and Diagnosis

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L.9 FALSE-POSITIVE TEST RESULTS</strong></td>
<td>Discuss the problem of false-positive results when testing populations of high versus low HIV prevalence.</td>
</tr>
<tr>
<td><strong>L.10 TEST SENSITIVITIES AND SPECIFICITIES</strong></td>
<td>Discuss the sensitivity and specificity of enzyme immunoassay (EIA) and Western blot HIV antibody tests.</td>
</tr>
<tr>
<td><strong>L.11 TEST INTERPRETATION</strong></td>
<td>Discuss the diagnosis of HIV infection through appropriate use and interpretation of HIV antibody testing, including different testing methods (e.g., serum, urine, saliva, rapid testing), and discuss the approach to indeterminate serology results.</td>
</tr>
<tr>
<td><strong>L.12 TEST SENSITIVITY TO HIV VARIANTS</strong></td>
<td>Explain how different antibody tests and viral load tests vary in their sensitivities to detect HIV-1, HIV-2, and the HIV-1 subclades.</td>
</tr>
<tr>
<td><strong>L.13 DIAGNOSIS OF PRIMARY INFECTION</strong></td>
<td>Describe the approach to the diagnosis of the acute retroviral syndrome (primary HIV infection), including use of HIV viral load and detuned antibody testing.</td>
</tr>
</tbody>
</table>
PART II: APPROACH TO THE PATIENT WITH HIV

Chapter 5: History

II.1 TAKING PATIENT HISTORIES
Describe proper history taking in an HIV+ patient, including an appropriate systems review for both an initial visit and a routine follow-up visit.

II.2 TAKING SENSITIVE HISTORIES
Describe a nonjudgmental approach to obtaining a sexual history, history of abuse or neglect, and a history of recreational drug use/drug addiction.

Chapter 6: Physical Examination

II.3 KEY COMPONENTS
Describe key components of the physical examination and evaluation of the HIV+ patient.

Chapter 7: Laboratory Evaluation

II.4 BASELINE EVALUATIONS
Identify important baseline laboratory evaluations for the new patient with HIV infection.

II.5 PROPHYLAXIS INDICATIONS
Discuss laboratory indications for specific prophylaxes.

Chapter 8: Symptoms/System Evaluation

II.6 RESPIRATORY SYMPTOMS
Discuss the differential diagnosis of the following respiratory symptoms in HIV+ patients:
(a) shortness of breath with or without cough; (b) chest pain.

II.7 GASTROINTESTINAL SYMPTOMS
Discuss the differential diagnosis of the following gastrointestinal symptoms in HIV+ patients:
(a) diarrhea; (b) odynophagia/dysphagia; (c) abdominal pain.

II.8 NEUROLOGIC SYMPTOMS
Discuss the differential diagnosis of the following neurologic symptoms in HIV+ patients:
(a) headache; (b) seizure; (c) painful feet; (d) paraplegia; (e) hemiparesis; (f) altered mental status.

II.9 FATIGUE
Discuss the differential diagnosis of fatigue in HIV+ patients.

II.10 WASTING
Discuss the differential diagnosis of wasting in HIV+ patients.

II.11 FEVER
Discuss the differential diagnosis of fever in HIV+ patients.

II.12 HIP PAIN
Discuss the evaluation of hip pain in HIV+ patients.

Chapter 9: HIV Testing and Counseling

II.13 CONFIDENTIAL AND ANONYMOUS TESTING
Discuss confidential and anonymous HIV testing, pretest and posttest counseling, consent for HIV testing, and prenatal/neonatal HIV antibody testing.

II.14 PATIENT EDUCATION ESSENTIALS
Outline the basic information needed, and appropriate sequencing of education, for a newly diagnosed HIV+ patient, including but not limited to antiretroviral therapy, adherence, and treatment complications.

Chapter 10: Health Maintenance

II.15 CONTRAINDICATED COMMON VACCINES
Identify any commonly used vaccines that are contraindicated in HIV+ patients.

II.16 RECOMMENDED VACCINES
Discuss the use of pneumococcal vaccine, hepatitis A and B vaccines, and influenza vaccines in HIV+ patients.
II.17 PAP SMEARS
Discuss the recommended frequency of performing anal and cervical Pap smears in HIV+ women.

II.18 PPD TESTS
Differentiate between a positive PPD test in HIV+ versus HIV- individuals.

II.19 ROUTINE DENTAL FOLLOW-UP
Discuss the importance of routine dental follow-up exams for HIV+ patients.

Chapter 11: Prevention Education

II.20 ROUTES OF TRANSMISSION
Formulate three questions to assess a patient’s knowledge of routes of HIV transmission and its prevention.

II.21 SAFER SEX
Recommend two approaches for safer sex practices aimed at prevention of HIV infection and other STDs.

II.22 RISK REDUCTION COUNSELING
Describe a nonjudgmental method of HIV risk reduction counseling.

II.23 HYGIENE AND INFECTION CONTROL COUNSELING
Propose counseling strategies for HIV+ patients and their household contacts to enhance hygiene and infection control in the home.

II.24 FAMILY PLANNING COUNSELING
Discuss family planning, counseling, and issues relating to pregnancy in HIV+ women and noninfected female partners of HIV+ men.

II.25 INJECTION DRUG ABUSE
Recommend two approaches for decreasing the likelihood of HIV transmission when injection drugs are abused.

II.26 BREAST-FEEDING
Discuss issues surrounding breast-feeding by HIV+ women.

II.27 PREVENTIVE HIV VACCINE RESEARCH
Discuss current research on the development of vaccines to prevent HIV infection.

Chapter 12: Care Settings/Modalities

II.28 UNIVERSAL PRECAUTIONS
Discuss the scientific rationale behind Universal Precautions.

II.29 PREVENTING HIV AND HEPATITIS
Describe the use of Universal Precautions in health care settings to prevent HIV and hepatitis B/C transmission.

II.30 PHLEBOTOMY AND INFECTION CONTROL
Describe two components of proper infection control procedures for phlebotomy.

II.31 HIV+ HEALTH CARE WORKERS
Determine appropriate infection control measures for a health care worker who is HIV+.

II.32 PULMONARY TUBERCULOSIS AND INFECTION CONTROL
Describe proper infection control procedures for a patient with proven or suspected pulmonary tuberculosis.

II.33 OCCUPATIONAL EXPOSURE MANAGEMENT
Identify at least three critical elements in the management of occupational needle-stick exposures.

II.34 ANTIRETROVIRALS DURING HOSPITALIZATION
Discuss indications for initiation, continuation, and discontinuation of antiretroviral therapy in hospitalized patients.

II.35 AIDS-RELATED DEMENTIA AND IN-HOME CARE
Identify at least three key elements of a discussion with the family of a person with AIDS-related dementia regarding in-home care.

II.36 IN-DWELLING CATHETERS
Describe the antiseptic care of the permanent in-dwelling intravenous catheter.
II.44 CARING FOR HIV+ WOMEN

Discuss the following specific issues in the management of HIV+ women:
(a) differentiation in the natural history of HIV disease in women compared with that in men;
(b) differences in viral load and implications for initiation of antiretroviral therapy;
(c) important considerations in the use of oral contraceptives.

II.45 CARING FOR HIV+ CHILDREN

Identify similarities and differences in the diagnosis, laboratory markers, spectrum of disease manifestations, antiretroviral treatment, and opportunistic infection prophylaxis in HIV+ prepubertal children compared with HIV+ adults.

II.46 CARING FOR HIV+ ADOLESCENTS

Recognize the potential impact of physiologic and cognitive development in an HIV+ adolescent on treatment adherence and secondary prevention.

II.47 CARING FOR OLDER HIV+ PATIENTS

Discuss specific issues in the diagnosis and management of HIV+ patients who are 50 years or older.

II.48 CARING FOR TRANSGENDER HIV+ PATIENTS

Describe the management of transgender HIV+ patients, including use of hormone therapy.

II.49 SEXUAL PRACTICES

Define bare-backing, fisting, rimming, and water sports.

II.50 DRUG USE TERMS

Define poppers, works, speedball, snorting, and ecstasy.

II.51 INCARCERATED POPULATIONS

Recognize important medical and social problems that can occur when HIV+ people are incarcerated.

II.52 RURAL POPULATIONS

Recognize at least three obstacles to optimal HIV care for rural patients.

II.53 MIGRATING POPULATIONS

Discuss limitations in access to HIV care among patients with undocumented citizenship or migrant populations.
**II.64 DRUG ABUSE IN HIV+ PATIENTS**
Discuss the importance of identifying and treating drug abuse and dependence in HIV+ patients, and the impact on HIV transmission, antiretroviral adherence, and overall medical care outcomes.

**Chapter 15: Psychosocial and Economic Issues**

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.55 HANDLING DIFFICULT PATIENTS</td>
<td>Describe the professional approach to HIV+ patients who are hostile and belligerent or chronically ill and needy.</td>
</tr>
<tr>
<td>II.56 INTERVAL CARE</td>
<td>Describe the appropriate responsibilities for the HIV clinician regarding interval care (i.e., access during weekends and after hours) for HIV+ patients.</td>
</tr>
<tr>
<td>II.57 ETHICAL ISSUES</td>
<td>Discuss the following issues in HIV and ethics: (a) confidentiality and right to privacy; (b) duty to report communicable diseases; (c) death with dignity; (d) patient-provider relationship boundaries.</td>
</tr>
<tr>
<td>II.58 DISCLOSURE</td>
<td>Discuss the potential impact and discrimination that may result from disclosing HIV diagnosis in the patient’s workplace and to the patient’s family.</td>
</tr>
<tr>
<td>II.59 ADHESION COUNSELING</td>
<td>Describe the interpersonal and communication skills required in effective adherence counseling.</td>
</tr>
<tr>
<td>II.60 PUBLIC HEALTH INTERVENTIONS</td>
<td>Describe at least three effective approaches for (a) HIV transmission prevention at the public health level; (b) HIV/hepatitis prevention in an STD clinic.</td>
</tr>
<tr>
<td>II.61 TUBERCULOSIS PREVENTION EDUCATION</td>
<td>List at least three elements of patient education in an HIV practice for tuberculosis prevention.</td>
</tr>
<tr>
<td>II.63 INTERDISCIPLINARY TEAMS</td>
<td>Identify at least four indications for referral of an HIV+ person to a case manager or social worker.</td>
</tr>
<tr>
<td>II.65 MENTAL HEALTH REFERRAL</td>
<td>Describe the advantages of an interdisciplinary team in HIV care and how to work effectively within such a team.</td>
</tr>
<tr>
<td>II.66 COMMUNITY REENTRY</td>
<td>Describe the professional approach to HIV+ patients who are hostile and belligerent or chronically ill and needy.</td>
</tr>
<tr>
<td>II.67 DOMESTIC VIOLENCE</td>
<td>Describe how to manage problems that occur surrounding community reentry of an HIV+ patient from inpatient and correctional settings.</td>
</tr>
<tr>
<td>II.68 ADHESION AND HOMELESSNESS</td>
<td>List at least three HIV-related conditions with functional disorders for which referral to a mental health professional is appropriate.</td>
</tr>
<tr>
<td>II.69 DOMESTIC VIOLENCE</td>
<td>Describe the association of HIV and domestic violence and describe appropriate interventions.</td>
</tr>
</tbody>
</table>

**Chapter 16: Complementary and Alternative Medical Approaches**

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>II.68 NUTRITIONAL SUPPLMENTS</td>
<td>Identify two indications for nutritional supplements in HIV+ patients.</td>
</tr>
<tr>
<td>II.69 DIETITIAN REFERRAL</td>
<td>Identify at least three conditions warranting referral to a registered dietitian, and essential information to be included in the treating physician’s written referral.</td>
</tr>
</tbody>
</table>
II.70 HERBAL REMEDIES

Cite the following considerations in the use of herbal remedies in HIV+ patients:
(a) known interactions between St. John’s wort and antiretroviral agents;
(b) appropriate advice to HIV+ patients who intend to self-medicate with herbal remedies, with or without antiretroviral therapy.

II.71 PSYCHOLOGIC/PSYCHOIMMUNOLOGIC BENEFITS

List possible psychologic/psychoimmunologic benefits that patients may derive from complementary and alternative therapy interventions.

Chapter 17: Systems-Based Practice

II.72 COORDINATION WITH HEALTH CARE MANAGERS

Discuss how to coordinate with health care managers to assess, coordinate, and improve HIV care.

II.73 HIV CARE IN DIFFERENT REIMBURSEMENT SETTINGS

Review the various methods for reimbursement of HIV-related health care services in the United States.

II.74 ACCESSING FINANCIAL ASSISTANCE PROGRAMS

Define and describe how to access the following: (a) the federal Ryan White CARE Act and its ADAP (sometimes called HDAP) program; (b) compassionate access/medication assistance program supported by pharmaceutical companies.

II.75 CPT CODES AND REIMBURSEMENT

Explain how ascribing appropriate CPT codes to an HIV-related diagnosis may be important for reimbursement.

II.76 COSTS OF CARE

Describe recent trends in the inpatient and outpatient costs of HIV care in the United States.

Chapter 18: Palliative Care and End-of-Life Support

II.77 CARING FOR THE TERMINALLY ILL PATIENT

Discuss the physician’s responsibilities in caring for the terminally ill person with HIV.

II.78 HOSPICE CARE

Identify the role of hospice care and discuss (a) at least two HIV-related conditions for which hospice care is a frequent alternative; (b) at least two advantages to the patient, family, and loved ones of hospice care for a terminally ill person with HIV disease.

II.79 PALLIATIVE CARE

Discuss palliative care for common symptoms in end-stage HIV+ patients, including but not limited to fatigue, sleep disturbance, pruritus, dyspnea, hiccups, and dry mouth.

Chapter 19: Legal Issues

II.80 DISEASE REPORTING SYSTEM

Discuss the system of disease reporting in the United States and identify reportable conditions relevant to HIV care.

II.81 PARTNER NOTIFICATION

Describe the rationale for partner notification practices in HIV disease.

II.82 ISSUES IN NONDISCLOSURE

Discuss the physician’s ethical and legal responsibilities with HIV+ patients who do not disclose their HIV status to sexual partners.

II.83 TREATING MINORS

Describe legal issues related to treatment of minors with HIV infection.

II.84 CONFIDENTIALITY

Discuss legal issues related to confidentiality and HIV.

II.85 ADVANCE PLANNING

Discuss the use of advance directives, durable power of attorney, and health proxy for HIV+ patients.
PART III: CLINICAL MANIFESTATIONS OF HIV INFECTION

Chapter 20: Acute HIV Infection

III.1 SYMPTOMS AND SIGNS  Describe at least six symptoms and signs of the clinical presentation of acute HIV infection.

Chapter 21: Chronic HIV Infection

III.2 SYMPTOMS AND SIGNS  Identify at least six constitutional symptoms and clinical signs of chronic HIV infection.

III.3 WASTING  Describe the presentation and management of wasting due to HIV disease, and define the HIV wasting syndrome.

Chapter 22: Opportunistic Infections

III.4 PRESENTATION  Describe the various clinical presentations and relative frequencies of each of these opportunistic infections:

(a) Pneumocystis (jiroveci, formerly carinii) pneumonia (PCP);
(b) fungal infections (candidiasis, cryptococcosis, histoplasmosis, and coccidioidomycosis);
(c) protozoan/parasitic infections (toxoplasmosis, cryptosporidiosis, microsporidiosis, and leishmaniasis);
(d) mycobacterial infections (tuberculosis, MAC, and other nontuberculous mycobacteria);
(e) viral infections (CMV, HSV, VZV EBV, and PML);
(f) bacterial infections (e.g., recurrent pneumococcal pneumonia, bartonellosis).

III.5 DIAGNOSTIC LAB PROCEDURES  Identify the appropriate procedures and laboratory investigations required to make a diagnosis for each of the opportunistic infections listed in Objective III.4.

III.6 PREFERRED AND ALTERNATIVE TREATMENTS  Cite the preferred and at least one alternative treatment regimen for each of the opportunistic infections listed in Objective III.4.

III.7 DRUG TOXICITY MANAGEMENT  Describe the management of common toxicities for each of the medications used to treat opportunistic infections.

III.8 PROPHYLAXIS  List the recommended prophylactic regimens, and cite the guidelines for initiation and discontinuation of prophylaxis, for (a) PCP; (b) MAC; (c) fungal infections; (d) toxoplasmosis; (e) herpesvirus infection (including CMV).

III.9 ENVIRONMENTAL PROTECTION STRATEGIES  Describe environmental protection strategies that minimize the risk of acquiring specific opportunistic infections.

Chapter 23: Malignancies and Neoplasms

III.10 KAPOSI’S SARCOMA  Describe the following aspects of screening, presentation, diagnosis, treatment, and specialist referral for Kaposi’s sarcoma (KS):

(a) populations at greatest risk for KS and the role of KS-associated herpesvirus/human herpesvirus 8 (HHV-8) in the etiology of KS;
(b) the incidence of KS in the era of HAART;
(c) clinical presentations (both cutaneous and visceral), formulating the differential diagnoses for KS, explaining the need to confirm diagnosis with biopsy;
(d) appropriate treatment options, including HAART, local therapies, and systemic chemotherapy, as well as timing and indications for referral to a specialist;
(e) prognostic indicators of KS on the basis of CD4 count, organ involvement, and tumor burden.
Chapter 24: Dermatologic Complications

III.18 PRESENTATION AND TREATMENT

Describe the presentation and therapy for the following common dermatoses seen in HIV+ patients:

(a) noninfectious: seborrheic dermatitis, eosinophilic folliculitis/prurigo nodularis, xerosis, psoriasis, drug eruptions, acne;
(b) fungal: tinea, onychomycosis, candidiasis, cutaneous cryptococcosis, cutaneous histoplasmosis, cutaneous Penicillium marneffei infection;
(c) viral: molluscum contagiosum, warts and Bowen’s disease, disseminated cutaneous herpetic eruptions;
(d) bacterial: multifocal cellulitis, bacillary angiomatosis, impetigo, syphilis;
(e) parasitic: scabies, Acanthamoeba.

III.19 REFERRAL

Discuss the need for referral to a dermatologist and the role of early skin biopsy in an afebrile patient and an acutely ill febrile patient with a skin eruption.

Chapter 25: Dental/Oral and ENT Complications

III.20 DENTAL/ORAL COMPLICATIONS

Describe the clinical presentation, diagnosis, and therapy for each of the following dental and oral manifestations of HIV infection: (a) oral hairy leukoplakia; (b) gingivitis; (c) ulcers and aphthous ulcerations; (d) xerostomia; (e) angular cheilitis; (f) Kaposi’s sarcoma; (g) intraoral lymphoma; (h) intraoral warts.

III.21 ENT COMPLICATIONS

Describe the diagnosis and management of common ENT problems seen in HIV+ patients, including but not limited to otitis media, parotid hypertrophy, and sinusitis.

Chapter 26: Endocrine Disorders

III.22 SCREENING, DIAGNOSIS, AND MANAGEMENT

Discuss screening, diagnosis, and management of common endocrine manifestations of HIV disease, including but not limited to gonadal and adrenal dysfunction.
Chapter 27: Gynecologic Complications

III.23 COMMON INFECTIONS
Discuss the prevalence, diagnosis, and management of the following common gynecologic infections in HIV+ women: (a) vaginal candidiasis; (b) bacterial vaginosis; (c) trichomoniasis.

III.24 MENSTRUAL DISORDERS
Discuss the prevalence of amenorrhea, other menstrual disorders, and infertility in HIV+ women.

Chapter 28: Respiratory Complications

III.25 COMMUNITY-ACQUIRED PNEUMONIA
Discuss the impact of HIV seropositivity on risk for community-acquired pneumonia.

III.26 PNEUMONIA DIAGNOSIS AND MANAGEMENT
Formulate the differential diagnosis and discuss the management of cavitory and noncavitory pneumonia in HIV+ patients.

III.27 LYMPHOCYTIC INTERSTITIAL PNEUMONITIS
Discuss lymphocytic interstitial pneumonitis in HIV+ patients.

III.28 PULMONARY HYPERTENSION
Describe the occurrence and clinical presentation of idiopathic primary pulmonary hypertension in HIV+ patients.

Chapter 29: Psychiatric and Neurologic Complications

III.29 PSYCHIATRIC DISORDERS
Identify the most common psychiatric disorders in HIV+ patients and their basic management (e.g., adjustment disorders, depression, bipolar disorder, and substance abuse).

III.30 DEMENTIA
Discuss the clinical presentation, differential diagnosis, and management of HIV dementia.

III.31 MYELOPATHY
Discuss the clinical presentation, differential diagnosis, and management of HIV myelopathy.

III.32 INTRACRANIAL MASS LESIONS
Discuss the clinical presentation, differential diagnosis, and treatment of an intracranial mass lesion in an AIDS patient.

III.33 MENINGITIS
Discuss the clinical presentation, differential diagnosis, and treatment of meningitis in an HIV+ patient.

III.34 DISTAL SYMMETRICAL POLYNEUROPATHY
Discuss the clinical presentation, differential diagnosis, and management of distal symmetrical polyneuropathy in an HIV+ patient.

III.35 AIDP/CIDP
Discuss the clinical presentation, differential diagnosis, and management of acute and chronic inflammatory demyelinating polyneuropathy (AIDP/CIDP) in HIV+ patients.

III.36 CMV POLYRADICULOPATHY
Discuss the clinical presentation, differential diagnosis, and management of cytomegalovirus polyradiculopathy in HIV+ patients.

III.37 MONONEURITIS
Discuss the clinical presentation, differential diagnosis, and management of mononeuritis multiplex in HIV+ patients.

Chapter 30: Gastrointestinal and Hepatobiliary Complications

III.38 DIARRHEA
Describe the diagnosis and treatment of diarrhea in HIV+ patients.

III.39 ESOPHAGITIS
Discuss the differential diagnosis and treatment of esophagitis in HIV+ patients.
III.40 HEPATITIS
Discuss the following aspects of hepatitis in HIV+ patients:
(a) clinical presentation, diagnosis, treatment, and treatment complications of hepatitis B;
(b) clinical presentation, diagnosis, treatment, and treatment complications of hepatitis C;
(c) other viral causes of hepatitis;
(d) drug-induced hepatitis.

III.41 PANCREATITIS
Discuss the differential diagnosis and evaluation of an elevated serum amylase in HIV+ patients, and causes and management of pancreatitis.

III.42 CHOLECYSTITIS AND CHOLANGIOPATHY
Describe the clinical presentation and management of cholecystitis, acalculous cholecystitis, and cholangiopathy in HIV infection.

Chapter 31: Ocular Complications

III.43 CYTOMEGALOVIRUS
Describe appropriate screening, diagnosis, management, and referral for HIV+ patients with cytomegalovirus retinitis.

III.44 HIV RETINOPATHY
Distinguish between HIV retinopathy and CMV retinitis.

III.45 VZV MANIFESTATIONS
Discuss the ocular manifestations of varicella-zoster virus, including progressive outer retinal necrosis.

Chapter 32: Hematologic Complications

III.46 CYTOPENIAS
Describe the etiology and management of anemia, neutropenia, and thrombocytopenia in HIV infection, including the use of agents such as erythropoietin and filgrastim.

III.47 PARVOVIRUS B19
Describe the manifestations, evaluation, and treatment of parvovirus B19 infection in HIV+ patients.

III.48 COAGULATION DISORDERS
Discuss the various coagulation disorders and their complications in HIV infection, including but not limited to antiphospholipid syndromes, the lupus anticoagulants, and protein C and S deficiencies.

Chapter 33: Cardiac Complications

III.49 CARDIOMYOPATHY
Review the prevalence, prognosis, and management of cardiomyopathy in HIV infection.

III.50 PERICARDITIS
Formulate the differential diagnosis of pericardial disease in an AIDS patient.

Chapter 34: Renal Complications

III.51 NEPHROPATHY
Discuss risk factors, presentation, diagnosis, and management of nephropathy in HIV+ patients.

Chapter 35: Musculoskeletal Complications

III.52 SKELETAL AND RHEUMATOLOGIC DISORDERS
Discuss the diagnosis and management of the following skeletal and rheumatologic complications of HIV disease: (a) avascular necrosis of bone; (b) osteopenia; (c) osteoporosis; (d) diffuse interstitial lymphocytosis syndrome; (e) arthritis.

III.53 PYOMYOSITIS
Discuss pyomyositis and its therapy in HIV+ patients.

III.54 MYOPATHY
Discuss myopathy in HIV+ patients.
Chapter 36: Sexually Transmitted Diseases

III.55 SYPHILIS

Discuss screening, clinical manifestations, indications for cerebrospinal fluid analysis, treatment, and follow-up for syphilis in HIV infection.

III.56 OTHER STDs

Discuss the diagnosis and management of the following in the context of HIV disease: (a) gonorrhea; (b) Chlamydia; (c) pelvic inflammatory disease; (d) herpes simplex virus; (e) human papillomavirus; (f) lymphogranuloma venereum; (g) chancroid; (h) granuloma inguinale.
PART IV: PRINCIPLES OF ANTIRETROVIRAL THERAPY

Chapter 37: Initiation

IV.1 TREATMENT OF ACUTE HIV
Debate the advantages and disadvantages of very early treatment of acute HIV infection.

IV.2 GUIDELINES FOR INITIATING THERAPY
Summarize the latest guidelines on HIV therapy by the U.S. Public Health Service and the International AIDS Society-USA Panel.

IV.3 DELAYING INITIATION
Appraise the advantages and disadvantages of delaying initiation of therapy in a patient with chronic HIV infection.

Chapter 38: Specific Agents

IV.4 MECHANISMS OF ANTIRETROVIRALS
Describe the mechanism and site of action for each of the different classes of antiretroviral agents: NRTI/NtRTIs, NNRTIs, protease inhibitors, and entry inhibitors.

IV.5 ANTIRETROVIRAL DOSING
Describe the usual dosing, dose modifications for impaired renal or liver clearance, and contraindications for each of the following antiretroviral agents:

- **NRTIs and NtRTIs:**
  - (a) zidovudine, Retrovir (AZT)
  - (b) stavudine, Zerit (d4T)
  - (c) zalcitabine, Hivid (ddC)
  - (d) lamivudine, Epivir (3TC)
  - (e) didanosine, Videx, (ddI)
  - (f) abacavir, Ziagen (ABC)
  - (g) tenofovir DF, Viread (TDF)

- **NNRTIs:**
  - (h) nevirapine, Viramune (NVP)
  - (i) delavirdine, Rescriptor (DLV)
  - (j) efavirenz, Sustiva (EFV)

- **Protease Inhibitors:**
  - (k) ritonavir, Norvir (RTV)
  - (l) saquinavir, Fortovase, Invirase (SQV)
  - (m) amprenavir, Agenerase (APV)
  - (n) indinavir, Crixivan (IDV)
  - (o) nelfinavir, Viracept (NFV)
  - (p) lopinavir/ritonavir, Kaletra (LPV/RTv)

IV.6 HYDROXYUREA
Discuss the arguments for and against the use of hydroxyurea (Hydrea, Droxia) as an adjuvant to certain NRTIs in antiretroviral therapy.

IV.7 COMMON ANTIRETROVIRAL TOXICITIES
Describe the following common toxicities and management of the agents listed in Objective IV.5:

- (a) NNRTI-induced hepatotoxicity and rash;
- (b) the abacavir hypersensitivity reaction, including rechallenge reactions;
- (c) zidovudine-associated anemia;
- (d) drug-induced pancreatitis;
- (e) peripheral neuropathy caused by stavudine, didanosine, and zalcitabine.
- (f) NRTI-associated lactic acidosis, neuromuscular weakness syndrome, and non-alcoholic steatohepatitis;
- (g) retinoid-like cutaneous side effects (xeroderma and xerostomia) of indinavir;
- (h) relationship between nephrolithiasis and indinavir;
- (i) hyperbilirubinemia caused by indinavir and atazanavir;
- (j) central nervous system toxicity caused by efavirenz.

IV.8 ANTIRETROVIRAL DRUG INTERACTIONS
Recognize the important drug-drug interactions that may be seen with the agents listed in Objective IV.5, and other agents, including but not limited to rifampin, rifabutin, methadone, oral contraceptive agents, commonly used drugs such as sildenafil (Viagra) and sedatives, and abused drugs such as MDMA (ecstasy).
Describe the U.S. Public Health Service and the International AIDS Society-USA guidelines on laboratory monitoring of HIV infection, including the use and interpretation of specific laboratory tests and the frequency with which they should be performed to track progression or regression of disease.

Chapter 39: Combination Therapy

IV.11 HAART REGIMENS
Discuss the principles of combining antiretroviral medications in HAART regimens, including reference to the U.S. Public Health Service and the International AIDS Society-USA guidelines for therapy.

IV.12 COFORMULATIONS
Name and describe all antiretroviral coformulated tablets and capsules available.

IV.13 NNRTI-PI INTERACTIONS
Describe the drug-drug interactions that occur between NNRTIs and protease inhibitors, and describe the antiretroviral dose adjustment required, including but not limited to the following combinations:
(a) indinavir + efavirenz;
(b) amprenavir + efavirenz;
(c) lopinavir/ritonavir + efavirenz or nevirapine.

IV.14 RITONAVIR PLUS OTHER PIs
Discuss the advantages and specific dosage recommendations when combining ritonavir with other protease inhibitors.

IV.15 CONTRAINDICATED ANTIRETROVIRAL COMBINATIONS
Discuss which antiretroviral combinations are contraindicated or should be coadministered with caution, and why.

IV.16 PHARMACODYNAMICS AND PHARMACOKINETIC ENHANCEMENT
Describe the terms $C_{\text{min}}$, $C_{\text{max}}$, $IC_{50}$, area under the curve (AUC), and inhibitory quotient (IQ) and the principle of pharmacokinetic enhancement of protease inhibitor drug levels by inhibition of the P450 enzyme system using ritonavir.

Chapter 40: Monitoring

IV.17 GUIDELINES ON LABORATORY MONITORING
Describe the U.S. Public Health Service and the International AIDS Society-USA guidelines on laboratory monitoring of HIV infection, including the use and interpretation of specific laboratory tests and the frequency with which they should be performed to track progression or regression of disease.

IV.18 RESISTANCE TESTING
Discuss the following aspects of resistance testing:
(a) evaluation of currently available resistance assays, including proper use, strengths, and limitations;
(b) the role of resistance testing in selecting a drug regimen for a treatment-naive patient;
(c) the role of resistance testing in selecting a drug regimen for a patient whose regimen is failing (in contrast to empiric selection of antiretroviral therapy based on the patient's prior treatment history).

IV.19 THERAPEUTIC DRUG MONITORING
Discuss the advantages and disadvantages of therapeutic drug monitoring.

Chapter 41: Modifying Therapy

IV.20 PRECAUTIONS
Discuss the precautions and contraindications for modifying antiretroviral therapy due to allergy, toxicity, and drug intolerance.

IV.21 REGIMEN FAILURE
Define failure of an antiretroviral regimen, and discuss the significance of viral load blips.

IV.22 INTENSIFICATION
Cite the advantages and disadvantages of intensification of a failing antiretroviral regimen, and discuss approaches to intensification.
### Learning Objectives

<table>
<thead>
<tr>
<th>Chapter 42: Investigational Antiretrovirals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IV.23 BOOSTING PI BLOOD LEVELS</strong></td>
</tr>
<tr>
<td>Discuss the rationale for boosting protease inhibitor blood levels and specify dosing regimens for individual protease inhibitors.</td>
</tr>
<tr>
<td><strong>IV.24 ANTIRETROVIRAL CROSS-RESISTANCE</strong></td>
</tr>
<tr>
<td>Discuss antiretroviral cross-resistance resulting from prior therapy, including the use of resistance testing and considerations for introducing alternate antiretroviral classes.</td>
</tr>
<tr>
<td><strong>IV.25 REGIMEN SELECTION</strong></td>
</tr>
<tr>
<td>Discuss the selection of an antiretroviral therapy regimen, considering pill burden, dosing frequency, and side effects as well as the patient’s lifestyle and preferences.</td>
</tr>
<tr>
<td><strong>IV.26 MEGA-HAART</strong></td>
</tr>
<tr>
<td>Summarize the research on use of mega-HAART (multidrug rescue therapy) in patients who have failed multiple drug regimens.</td>
</tr>
<tr>
<td><strong>IV.27 VIRAL FITNESS</strong></td>
</tr>
<tr>
<td>Discuss the concept of viral fitness or replicative capacity and its possible implications for treatment strategies.</td>
</tr>
<tr>
<td><strong>IV.28 STRUCTURED TREATMENT INTERRUPTIONS</strong></td>
</tr>
<tr>
<td>Discuss the following aspects of structured treatment interruptions (STIs):</td>
</tr>
<tr>
<td>(a) summarize results of studies involving STIs in patients whose viral loads are well suppressed by antiretroviral therapy initiated very early in primary HIV disease;</td>
</tr>
<tr>
<td>(b) summarize results of studies of STIs in patients whose HIV levels are well suppressed by antiretroviral therapy initiated during chronic infection;</td>
</tr>
<tr>
<td>(c) evaluate the risks and benefits of interrupting antiretroviral therapy in the setting of treatment failure before initiation of a rescue regimen;</td>
</tr>
<tr>
<td>(d) evaluate the risks and benefits of interrupting antiretroviral therapy in patients who did not meet current CD4 count guidelines for therapy at the time of initiation of HAART.</td>
</tr>
<tr>
<td><strong>IV.29 STRUCTURED INTERMITTENT THERAPY</strong></td>
</tr>
<tr>
<td>Discuss current research on structured intermittent therapy (e.g., one week on, one week off, etc.).</td>
</tr>
</tbody>
</table>

### Chapter 43: Pregnancy

<table>
<thead>
<tr>
<th>Chapter 43: Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IV.32 ANTIRETROVIRAL TREATMENT</strong></td>
</tr>
<tr>
<td>Discuss antiretroviral treatment in pregnancy.</td>
</tr>
<tr>
<td><strong>IV.33 ANTIRETROVIRAL AGENTS CONTRAINDICATED IN PREGNANCY</strong></td>
</tr>
<tr>
<td>Identify antiretroviral agents that are contraindicated in pregnancy.</td>
</tr>
<tr>
<td><strong>IV.34 ANTIRETROVIRAL TREATMENT DURING LABOR</strong></td>
</tr>
<tr>
<td>Outline the antiretroviral treatment for an HIV+ pregnant woman presenting in labor with no prior treatment.</td>
</tr>
<tr>
<td><strong>IV.35 CESAREAN SECTION</strong></td>
</tr>
<tr>
<td>Discuss the advantages and disadvantages of cesarean section in decreasing mother-to-child transmission of HIV.</td>
</tr>
</tbody>
</table>
Chapter 44: Hepatic and Renal Impairment

IV.36 LIVER IMPAIRMENT
List antiretroviral agents that should be used with caution in the presence of liver impairment.

IV.37 CHRONIC RENAL FAILURE
Describe how the antiretroviral treatment of an HIV+ patient would differ in the presence of chronic renal failure.

Chapter 45: Adherence Issues

IV.38 PRINCIPLES
Discuss adherence and the degree of adherence necessary for successful antiretroviral therapy.

IV.39 STRATEGIES
Describe strategies to enhance patient adherence, support, and cooperation when starting antiretroviral therapy.

IV.40 MEASUREMENT
Describe challenges in measuring patient adherence and the potential use of questionnaires, pill counts, pharmacy medication fill data, and electronic MEMS cap monitoring to measure adherence.

IV.41 PSYCHIATRIC ISSUES
Describe the need to treat substance abuse, depression, and other psychiatric disorders in order to achieve adherence to antiretroviral therapy.

IV.42 MULTIDISCIPLINARY COUNSELING
Discuss the importance of multidisciplinary adherence counseling, including but not limited to the roles of nurses, peers, and counselors in addition to the role of the physician.

IV.43 REMINDER DEVICES
Identify various reminder devices that can assist with patient adherence.

IV.44 ADDITIONAL SUPPORT
Describe the roles of community-based organizations, therapists, support groups, and other alternatives in assisting with and enhancing patient adherence.

IV.45 DIRECTLY OBSERVED THERAPY
Summarize the findings of studies of directly observed antiretroviral therapy.

Chapter 46: Complications of Treatment

IV.46 LIPODYSTROPHY
Describe lipodystrophy (lipoatrophy and/or abnormal fat deposition) and the association with antiretroviral agents.

IV.47 METABOLIC COMPLICATIONS
Discuss the occurrence and management of metabolic complications of therapy, including but not limited to hyperlipidemia, insulin resistance and diabetes mellitus, and lactic acidosis.

IV.48 CARDIOVASCULAR DISEASE
Discuss the concern about risk of cardiovascular disease secondary to HAART, and compare this with other cardiovascular risk factors.

IV.49 IMMUNE RECONSTITUTION DISEASE
Discuss the manifestations and clinical management of immune reconstitution disease secondary to opportunistic infections, including but not limited to MAC, TB, CMV, HBV, HCV, PML, HSV, and VZV, as a result of HAART.

IV.50 BONE COMPLICATIONS
Discuss evidence for and against the possible relationship between antiretroviral therapy and osteopenia, osteoporosis, and avascular necrosis.

Chapter 47: Post- and Preexposure Prophylaxis

IV.51 OCCUPATIONAL EXPOSURE
Discuss immediate antiretroviral prophylaxis for occupational exposure to HIV (needle stick or other).

IV.52 NONOCCUPATIONAL EXPOSURE
Discuss the use of postexposure prophylaxis and preexposure prophylaxis for nonoccupational settings, including sexual exposure or rape.
### Chapter 48: Immune-Based Therapies

**IV.53 INTERLEUKIN**
Discuss the advantages and disadvantages of interleukin as a treatment in HIV disease.

**IV.54 ALPHA INTERFERON**
Describe the advantages and disadvantages of alpha interferon as a treatment in HIV disease.

**IV.55 THERAPEUTIC HIV VACCINES**
Describe the potential therapeutic use of HIV vaccines in HIV+ patients.
### PART V: RESEARCH ISSUES

#### Chapter 49: Research Design and Analysis

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>V.1 RESEARCH PLANNING</td>
<td>Discuss the importance of specifying end points and analytic plans and of performing power calculations before carrying out research.</td>
</tr>
<tr>
<td>V.2 EVALUATING TREATMENT ANALYSES</td>
<td>Differentiate between an on-treatment analysis and an intent-to-treat analysis.</td>
</tr>
<tr>
<td>V.3 DRAWING CAUSE-AND-EFFECT CONCLUSIONS</td>
<td>Discuss the difficulties in drawing cause-and-effect conclusions about associated factors identified in an observational study.</td>
</tr>
</tbody>
</table>

#### Chapter 50: Drug Development and Expanded Access

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>V.4 ACCESS TO CLINICAL TRIALS</td>
<td>Describe the difference between phase I, II, III, and IV research clinical trials and how to enroll as an investigator in an expanded/early access program.</td>
</tr>
</tbody>
</table>

#### Chapter 51: Ethical Issues in Performing HIV Research

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>V.5 IRBs, INFORMED CONSENT, AND OTHER ETHICAL ISSUES</td>
<td>Describe the essentials of institutional review board processes and approval procedures, informed consent, and other ethical issues related to research in HIV medicine.</td>
</tr>
</tbody>
</table>
# Index of Recent Learning Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PART I: OVERVIEW OF HIV INFECTION</strong></td>
<td></td>
</tr>
<tr>
<td>I.1 Demographic trends</td>
<td>5</td>
</tr>
<tr>
<td>I.2 Prevalence</td>
<td>5</td>
</tr>
<tr>
<td>I.3 Predictive factors</td>
<td>5</td>
</tr>
<tr>
<td>I.8 Superinfection</td>
<td>5</td>
</tr>
<tr>
<td>I.11 Test interpretation</td>
<td>5</td>
</tr>
<tr>
<td>I.13 Diagnosis of primary infection</td>
<td>5</td>
</tr>
<tr>
<td><strong>PART II: APPROACH TO THE PATIENT WITH HIV</strong></td>
<td></td>
</tr>
<tr>
<td>II.27 Preventive HIV vaccine research</td>
<td>7</td>
</tr>
<tr>
<td><strong>PART III: CLINICAL MANIFESTATIONS OF HIV INFECTION</strong></td>
<td></td>
</tr>
<tr>
<td>III.16 Anal Pap smears</td>
<td>12</td>
</tr>
<tr>
<td>III.35 AIDP/CIDP</td>
<td>13</td>
</tr>
<tr>
<td>III.40 Hepatitis</td>
<td>14</td>
</tr>
<tr>
<td><strong>PART IV: PRINCIPLES OF ANTIRETROVIRAL THERAPY</strong></td>
<td></td>
</tr>
<tr>
<td>IV.1 Treatment of acute HIV</td>
<td>16</td>
</tr>
<tr>
<td>IV.2 Guidelines for initiating therapy</td>
<td>16</td>
</tr>
<tr>
<td>IV.3 Delaying initiation</td>
<td>16</td>
</tr>
<tr>
<td>IV.4 Mechanisms of antiretrovirals</td>
<td>16</td>
</tr>
<tr>
<td>IV.5 Antiretroviral dosing</td>
<td>16</td>
</tr>
<tr>
<td>IV.7 Common antiretroviral toxicities</td>
<td>16</td>
</tr>
<tr>
<td>IV.8 Antiretroviral drug interactions</td>
<td>16</td>
</tr>
<tr>
<td>IV.10 Once-daily regimens</td>
<td>17</td>
</tr>
<tr>
<td>IV.12 Coformulations</td>
<td>17</td>
</tr>
<tr>
<td>IV.13 NNRTI-PI interactions</td>
<td>17</td>
</tr>
<tr>
<td>IV.18 Resistance testing</td>
<td>17</td>
</tr>
<tr>
<td>IV.21 Regimen failure</td>
<td>17</td>
</tr>
<tr>
<td>IV.24 Antiretroviral cross-resistance</td>
<td>18</td>
</tr>
<tr>
<td>IV.27 Viral fitness</td>
<td>18</td>
</tr>
<tr>
<td>IV.28 Strategic treatment interruptions</td>
<td>18</td>
</tr>
<tr>
<td>IV.29 Structured intermittent therapy</td>
<td>18</td>
</tr>
<tr>
<td>IV.30 Expanded/early access</td>
<td>18</td>
</tr>
<tr>
<td>IV.31 Advanced phase trials</td>
<td>18</td>
</tr>
<tr>
<td>IV.33 Contraindicated antiretroviral agents in pregnancy</td>
<td>18</td>
</tr>
<tr>
<td>IV.37 Chronic renal failure</td>
<td>19</td>
</tr>
<tr>
<td>IV.46 Lipodystrophy</td>
<td>19</td>
</tr>
<tr>
<td>IV.47 Metabolic complications</td>
<td>19</td>
</tr>
<tr>
<td>IV.48 Cardiovascular disease</td>
<td>19</td>
</tr>
<tr>
<td>IV.51 Occupational exposure</td>
<td>19</td>
</tr>
<tr>
<td>IV.52 Nonoccupational exposure</td>
<td>19</td>
</tr>
</tbody>
</table>
The Academy is supported by unrestricted grants from:
HIV Medicine Core Curriculum
Learning Objectives

2003

Overview of HIV Infection

Approach to the Patient With HIV

Clinical Manifestations of HIV Infection

Principles of Antiretroviral Therapy

Research Issues