

Oral Health Care for People With HIV Infection

Tables and Recommendations

**AIDS Institute
New York State Department of Health**

CHAPTER 1

GENERAL PRINCIPLES

I. INTRODUCTION

GENERAL RECOMMENDATIONS:

Comprehensive primary care includes primary oral health care. Oral health should be an integral part of primary health care for all patients with HIV/AIDS.

Asymptomatic HIV-infected patients and clinically stable, fully functional AIDS patients should receive routine, comprehensive oral health care in the same manner as all other patients.

The provision of care should be coordinated between medical and oral health care providers.

II. ACCESS TO ORAL HEALTH CARE

RECOMMENDATIONS:

Oral health care services should be fully integrated into other available primary care services for HIV-infected patients.

To ensure adequate access to oral health care services, structural, financial, personal, and cultural barriers should be considered and addressed.^{1,7,11-13}

A. The Role of the Medical Provider

RECOMMENDATIONS:

Oral health care services should be fully integrated with available primary care services for HIV-infected patients.

The medical provider should encourage all patients under his/her care to schedule a semi-annual oral health examination and to adhere to the oral health care provider's recommendations regarding appropriate follow-up.

All medical health care providers should be aware of oral health referral sources for patients under their care.

Documentation that a dental referral was made or that the patient is under the care of a dental provider should be evident within the clinical care plan of the medical record.

The medical provider should forward any requested clinical information to the patient's oral health care provider in a timely fashion.

B. The Role of the Dental Provider

RECOMMENDATIONS:

To ensure adequate access to oral health care services, structural, financial, personal, and cultural barriers should be considered and addressed by the oral health care staff.

The oral health care provider should promptly communicate to the patient's medical provider any clinical findings that may signify a change in the patient's systemic health or any planned, extensive surgical procedures that may impact the patient's systemic health.

III. ORAL HEALTH CARE TREATMENT FOR PATIENTS WITH HIV INFECTION

A. Initial and Periodic Oral Examinations

RECOMMENDATIONS:

Every patient, regardless of HIV status, should receive a comprehensive initial evaluation.

To provide the best oral health care possible, oral health care professionals should perform a medical and social history along with a comprehensive medical systems review at recall visits for stable patients and at each visit for unstable patients. The dental provider should determine and document the patient's chief complaint(s) and health history.

Patients with HIV infection may develop associated skin manifestations and cervical lymphadenopathy; therefore, extraoral head and neck examinations and oral soft-tissue examinations should be performed at each visit. Findings should be discussed with the patient and the patient's primary care provider.

B. Treatment Planning

RECOMMENDATIONS:

A comprehensive treatment plan that includes preventive care and maintenance should be developed and discussed with the patient. Definitive treatment planning should include the incorporation of past and present medical history; past and present history of tobacco, alcohol, and other substance use; assessment of hard and soft intra- and extra-oral tissues; evaluation of existing radiographs; and thorough periodontal evaluation.

As HIV-related medications may affect dental treatment and cause adverse effects, the patient's oral health care provider should review all medications being used by the patient and should understand the potential for these medications to affect oral health care.

Dental treatment modifications for patients with HIV infection should be based on the patient's general medical status rather than his/her HIV infection.

Universal precautions (standard infection control procedures) should be followed for all patients (see Chapter 6: *Infection Control*).

C. Preventive Care

1. Dental Caries

RECOMMENDATIONS:

The clinician should practice evidence-based caries management in patients with HIV/AIDS.^{16,17}

The clinician should be aware that salivary gland disease, xerostomia, or HIV-related medications with high sugar content may be associated with increased risk for dental caries.

When there are non-cavitated lesions, remineralization should be performed with fluoride varnishes and home-care fluoride products. When there are cavitated lesions, proper restorative procedures and materials should be used according to the need of the patient.

2. Gingival and Periodontal Disease

RECOMMENDATION:

The clinician should perform a comprehensive gingival and periodontal examination, which includes a periodontal probing depth record.

IV. ORAL HEALTH CARE FOR HIV-INFECTED SUBSTANCE USERS

RECOMMENDATIONS:

Essential treatment and medications, including the use of appropriate analgesics, should be prescribed appropriately for all patients, including those patients who have a history of substance use or are active substance users.

Because a significant number of HIV patients have a history of substance use or are active substance users, the following oral complications, which may be related to drug addiction, should be considered: xerostomia, rampant dental caries (especially cervical caries), poor oral hygiene, gingival and periodontal disease, and occlusal wear as a result of bruxism.

Injection drug users (IDUs) have a high incidence of bacterial endocarditis. Oral health care providers should address this issue with respect to antibiotic prophylaxis before performing dental procedures.^{19,20}

V. HIV COUNSELING, TESTING, AND REPORTING

RECOMMENDATIONS:

Dentists and dental hygienists should be aware of HIV testing procedures and confidentiality requirements.

Dentists who become aware of a patient's risk for HIV infection or who identify a clinical condition that may be associated with HIV infection should refer the patient for HIV counseling and testing.

When evaluating an oral lesion indicative of immune deficiency in a patient with unknown HIV status, the provider should consider HIV infection, particularly in the absence of other causes of immunodeficiency. HIV counseling and testing should be recommended in these cases.

REFERENCES

1. U.S. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General—Executive Summary*. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000. Available at: <http://www.nidr.nih.gov/sgr/execsumm.htm>
2. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report. December 2000.
3. Bamberger JD, Unick J, Klein P, Fraser M, Chesney M, Katz MH. Helping the urban poor stay with antiretroviral HIV drug therapy. *Am J Public Health* 2000;90:699-701.
4. Levi J. The public health challenges of the HIV epidemic. *Am J Public Health* 2000;90:1023-1024.
5. Hogg RS, Rhone SA, Yip B, Sherlock C, Conway B, Schechter MT, et al. Antiviral effect of double and triple drug combinations amongst HIV-infected adults: Lessons from the implementation of viral load-driven antiretroviral therapy. *AIDS* 1998;12:279-284.
6. Marcus M, Freed JR, Coulter ID, Der-Martirosian C, Cunningham W, Andersen R, et al. Perceived unmet need for oral treatment among a national population of HIV-positive medical patients: Social and clinical correlates. *Am J Public Health* 2000;90:1059-1063.
7. Zalos GP. Meeting primary oral health care needs of HIV-infected women. *Am J Public Health* 1999;89:818-819.
8. Shiboski CH, Palacio H, Neuhaus JM, Greenblatt RM. Dental care access and use among HIV-infected women. *Am J Public Health* 1999;89:834-839.
9. Agency for Healthcare Research and Quality, Health Resources and Services Administration. Access to Quality Health Services. Healthy People 2010. August 22, 2000. Available at: <http://www.health.gov/healthypeople/document/HTML/Volume1/01Access.htm>
10. Glick M, Abel SN, Muzyka BC, DeLorenzo M. Dental complications after treating patients with AIDS. *J Am Dent Assoc* 1994;125:296-301.
11. Cohen LA, Romberg E, Grace E. A revisit of dental students' attitudes toward individuals with AIDS. *J Dent Educ* 2000;64:289-301.
12. Brimlow DL, Ross MW, Rankin KV. The perception of surrogate teaching patients with HIV disease of dental providers' fear and comfort. *J Dent Educ* 2000;64:597-602.
13. General Accounting Office. Oral Health: Factors Contributing to Low Use of Dental Services by Low-Income Populations. HEHS-00-149, September 11, 2000. Available at: <http://www.gao.gov/newitems/he00149.pdf>
14. Dental management of the HIV-infected patient. *J Am Dent Assoc* 1995;(Suppl):1-40.
15. Greene VA, Chu SY, Diaz T, Schable B. Oral health problems and use of dental services among HIV-infected adults: Supplement to HIV/AIDS Surveillance Project Group. *J Am Dental Assoc* 1997;128:1417-1422.
16. Anusavice KJ. Management of dental caries as a chronic infectious disease. *J Dent Educ* 1998;62:791-802.
17. Frontiers in clinical dentistry: Caries and periodontal disease—Symposium proceedings. Seattle, Washington, USA. May 21-22, 1998. *J Dent Educ* 1998;62:749-889.

18. Fischman S (ed). Emerging issues and future directions in remineralization: Proceedings of the Remineralization Symposium of 22-24 June 1999 in the Forsyth Dental Center, Boston, USA. *J Clin Dent* 1999;10:55-93.
19. Dajani AS, Taubert KA, Wilson W, Bolger AF, Bayer A, Ferrieri P, et al. Prevention of bacterial endocarditis: Recommendations by the American Heart Association. *JAMA* 1997;277:1794-1801. Available at: <http://216.185.112.5/presenter.jhtml?identifier=1729>
20. Glick M. Intravenous drug users: A consideration for infective endocarditis in dentistry? *Oral Surg Oral Med Oral Pathol* 1995;80:125.
21. New York State Public Health Law, Art 27-F.
22. *Clinician's Guide to HIV Pre-test and Post-test Counseling*. New York, NY: New York State Department of Health AIDS Institute; 2000.

FURTHER READING

American Dental Association and American Academy of Oral Medicine. Dental management of the HIV-infected patient. *J Am Dent Assoc* 1995;(Suppl):34-39.

Clinical Practice Guideline Number 7. *Evaluation & Management of Early HIV Infection*. Rockville, MD: US Department of Health and Human Services, Agency for Health Care Policy and Research; 1994: AHCPR publication 94-0572.

Glick M. *Dental Management of Patients with HIV*. Chicago, IL: Quintessence Publishing Co Inc; 1994.

CHAPTER 2

DIAGNOSIS AND MANAGEMENT OF SOFT-TISSUE LESIONS

I. INTRODUCTION

GENERAL RECOMMENDATIONS:

Oral lesions in patients infected with HIV should be evaluated and diagnosed in the same manner as lesions in all other dental patients.

An unexplained lesion that does not resolve following appropriate clinical management or empiric therapy warrants consideration of a biopsy and histologic examination of the tissue. If the decision is made not to obtain a biopsy, the reason for the decision should be documented.

As with any procedure, the risks involved in performing a biopsy should be weighed against the benefits. Patients with HIV infection may be at an increased risk for post-operative bleeding.⁶ Prior to biopsy procedures, the need for obtaining the patient's platelet count, prothrombin time and/or international normalized ratio (INR), activated partial thromboplastin time, and bleeding time should be evaluated.

The need for patient referral to a dental or medical specialist for management of oral lesions or for assessment or management of underlying systemic disease should be individualized.

The patient's primary care provider should be informed of the results of diagnostic procedures for all lesions as well as medications prescribed or any change in medications. Management of a patient with HIV infection often requires a multidisciplinary approach coordinated by the patient's primary care provider or case manager.

Any patient not known to be HIV infected should be referred for HIV counseling and testing when he/she presents with an oral lesion that is associated with an immunodeficient status or a sexually transmitted disease and when the presence of the lesion cannot be explained by a confirmed underlying condition or by a medication.

II. ORAL LESIONS

A. Oral Candidiasis

1. Diagnosis

RECOMMENDATION:

Diagnosis of oral candidiasis should be made by identification of clinically distinctive lesions, by microscopic examination of cytologic smears or biopsy tissue, or by response to antifungal therapy.

2. Treatment

RECOMMENDATIONS:

Topical and systemic medications outlined in this section should be used to treat HIV-associated candidiasis (see Tables 2-1 through 2-4).

Because significant interactions between systemic antifungal medications and ARV agents occur, the primary care provider and/or pharmacist should be consulted before prescribing these medications concurrently. Any change of medications should be discussed with the patient's health care provider.

TABLE 2-1 TOPICAL MEDICATIONS FOR ORAL CANDIDIASIS		
Agent	Dispense	Label
Clotrimazole troches (an imidazole)	2- to 4-week supply	Slowly dissolve one 10-mg troche in mouth 5 times/day for treatment. Slowly dissolve 1 troche in mouth 3 times/day for maintenance therapy.
Nystatin oral suspension (a polyene antifungal agent)*	2- to 4-week supply	Hold 1 teaspoonful (500,000 u) in mouth for 5 minutes, 4 times/day.
Amphotericin B oral suspension (a polyene antifungal agent)†	2- to 4-week supply	Place 1 mL (100 mg) on tongue and swish in mouth for as long as possible before swallowing.
Nystatin vaginal suppositories (a polyene antifungal agent)‡	2- to 4-week supply	Slowly dissolve 1 tablet (100,000 u) in mouth 6 to 8 times/day.

* Adherence to this regimen is often poor because of the time requirement.

† Used for the treatment of oral candidiasis refractory to nystatin and imidazole preparations.

‡ Although this preparation is not designed for oral use, clinicians have found it useful for treatment of oral candidiasis when the sugar content of other topical anticandidal medications is a concern. The prescription can be written as "nystatin vag. tabs." A sugarless, flavored lozenge may be dissolved simultaneously in the mouth to mask the taste of nystatin. Adherence with this regimen is often poor because of the time requirement.

TABLE 2-2 TOPICAL MEDICATIONS FOR ANGULAR CHEILITIS		
Agent	Dispense	Label
Antifungal creams - Clotrimazole cream 1% (an imidazole) - Miconazole cream 2% (an imidazole) - Ketoconazole cream 2% (an imidazole) - Nystatin cream 100,000 USP (a polyene antifungal agent)	2- to 4-week supply	Apply to affected area 4 times/day.
Combination creams* - Hydrocortisone-iodoquinol cream (a polyene antifungal agent) - Betamethasone dipropionate-clotrimazole cream - Triamcinolone-nystatin cream	2- to 4-week supply	Apply to affected area 3 times/day.

* For the treatment of angular cheilitis, some clinicians have found combination creams more effective than antifungal medications alone. These include combination preparations of topical hydrocortisone, antifungal agents, and hydrocortisone-iodoquinol cream, which combines an antifungal-antibacterial medication with an anti-inflammatory antipruritic.

TABLE 2-3 SYSTEMIC ANTIFUNGAL MEDICATIONS	
Agent	Use
Ketoconazole (an imidazole), Fluconazole (a triazole), Itraconazole (a triazole)*	Common dosage: ketoconazole 200 mg once daily; fluconazole 100 mg/day; itraconazole 200 mg once daily.
Amphotericin B (a polyene antifungal agent)	An intravenous medication that may be used for candidiasis resistant to other medications. Azole-resistant fungal infections should be treated with amphotericin B and in consultation with an HIV Specialist. (Amphotericin B is also available as a topical preparation.)

* Because these medications are easier for patients to use than topical preparations, adherence often improves.

TABLE 2-4 SPECIAL CONSIDERATIONS FOR SYSTEMIC ANTIFUNGAL MEDICATIONS	
Drug	Considerations
Cisapride	Azole antifungal medications are contraindicated in patients taking cisapride due to the potential for life-threatening cardiac events.
Fluconazole	The absorption of fluconazole is not dependent on gastric pH.
Ketoconazole	Ketoconazole is well absorbed only in persons with normal gastric acidity; medications that decrease gastric output or raise gastric pH will decrease the effectiveness of ketoconazole. Such medications include cimetidine, ranitidine, and antacids. Hepatotoxicity, including some rare cases of fatalities, has been associated with oral ketoconazole. Liver function tests should be measured before starting treatment with ketoconazole and every 2 weeks during treatment.
Phenytoin	Systemic antifungal use with phenytoin may inhibit phenytoin metabolism and cause toxicity.
Rifampin	Rifampin, an antituberculous medication, may decrease the serum concentrations of systemic antifungal medications, rendering them less effective.
Warfarin	Systemic antifungal use in patients who are anticoagulated with warfarin may result in increased anticoagulant effect and bleeding.

Patients should be instructed in proper oral hygiene to prevent caries that may result from the high sugar content in nystatin and clotrimazole. The use of topical fluoride therapy should be considered for patients taking such medication.

When oropharyngeal candidiasis cannot be controlled with topical medication alone, systemic therapy should be initiated. It may be necessary to continue topical medication use in addition to systemic medication use to control oral candidiasis.

A typical antifungal treatment course is 10 to 14 days, with use of the antifungal agent continued even after clinical signs and symptoms of oral candidiasis have been resolved.

Because patients with reduced salivary flow are more susceptible to oral candidiasis, salivary flow should be stimulated to help reduce the incidence and severity of oral candidiasis. Chewing sugarless gum or dissolving sugarless lozenges in the mouth can accomplish salivary flow stimulation.

B. Hairy Leukoplakia

2. Diagnosis

RECOMMENDATIONS:

Diagnosis of oral hairy leukoplakia in patients known to be HIV infected should be confirmed by identification of distinct clinical lesions. If the lesions are clinically consistent with hairy leukoplakia and the patient is known to be HIV infected, no further diagnostic procedure is necessary.

As in all patients, when an HIV-infected patient presents with a white lesion on the lateral border of the tongue, which cannot be diagnosed on the basis of its clinical appearance, biopsy and microscopic examination should be considered.

3. Treatment

RECOMMENDATION:

Hairy leukoplakia generally does not require treatment.

C. Oral Ulcers

1. Evaluation and General Management

RECOMMENDATIONS:

Diagnosis of oral ulcers should be based on characteristic clinical appearance; the results of cytologic smear, viral culture (isolation), and biopsy and microscopic examination; or response to therapy (see Figure 2-1).

If an ulcer does not respond to treatment within 2 weeks, a biopsy and histologic examination should be performed.

If the decision is made not to obtain a biopsy of an ulcer that is non-responsive to treatment, the provider should document the reason for the decision.

2. Herpes Simplex Ulcers

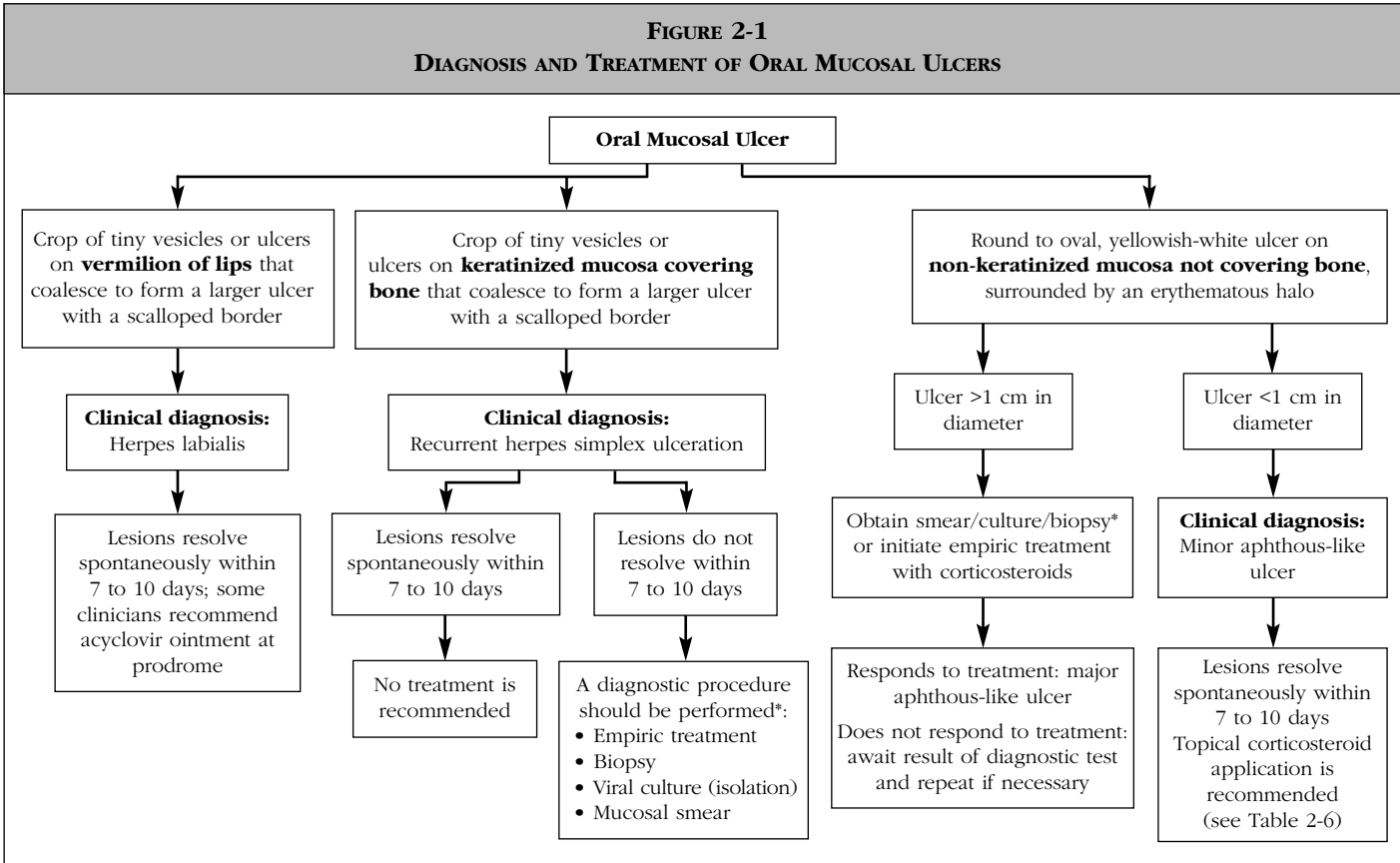
b. Diagnosis

RECOMMENDATIONS:

Diagnosis of typical recurrent herpes simplex ulceration should be made by recognizing the typical clinical appearance on the labial vermilion border or intra-orally on keratinized mucosa attached to bone.

Viral culture, mucosal smear, biopsy, and response to acyclovir are recommended options to accurately diagnose HSV-associated ulcers.

**FIGURE 2-1
DIAGNOSIS AND TREATMENT OF ORAL MUCOSAL ULCERS**



* Possible diagnoses and treatments: Atypical herpes simplex ulceration (see Table 2-5); major aphthous-like ulcer (see Table 2-6); cytomegalovirus ulceration (see page 22-23); ulceration due to other infectious agents (see page 23); lymphoma (refer to an HIV Specialist for treatment recommendations).

As atypical herpetic ulcers may be the first sign of immunosuppression, patients with these ulcers who are not known to be HIV infected should be referred for HIV counseling and testing.

c. Treatment

RECOMMENDATION:

While awaiting confirmation of the diagnosis, oral health care providers should consider initiation of systemic acyclovir treatment if atypical HSV ulceration is suspected (see Table 2-5). Response to this medication may be helpful in confirming the diagnosis.

TABLE 2-5 TREATMENT REGIMEN FOR ATYPICAL HSV		
Agent	Dispense	Label
Acyclovir 200-mg capsules*†	2- to 4-week supply	Take 1 to 2 capsules 5 times/day for 10 days. Dosage will vary depending on clinical severity and the immunologic status of the patient.

* Valacyclovir is the prodrug of acyclovir and is commonly used.

† Acyclovir-resistant herpes simplex ulcerations should be considered when ulcers with a confirmed diagnosis of HSV infection do not respond to acyclovir. Treatment with foscarnet is recommended for such lesions.

3. Aphthous Ulcers

a. Diagnosis

RECOMMENDATION:

Diagnosis of aphthous ulcers should be based on the characteristic clinical appearance of painful, round-to-oval, yellow-white ulcers surrounded by a halo of erythema (see Figure 2-1). For all ulcers not exhibiting these characteristic clinical features or when empiric therapy has failed, viral culture (isolation), mucosal smear, or biopsy may be necessary to rule out ulcers caused by opportunistic infections.

b. Treatment

RECOMMENDATION:

The management of aphthous ulcers should include the use of topical corticosteroids; however, the provider should be aware that steroid use may result in candidal overgrowth.

See Table 2-6.

4. Cytomegalovirus Oral Ulceration

b. Diagnosis

RECOMMENDATION:

Diagnosis of an oral ulcer due to CMV should be established by biopsy and histologic examination.

c. Treatment

RECOMMENDATION:

Patients with a diagnosis of CMV oral ulceration should be referred to a physician for further evaluation and treatment.

TABLE 2-6 TREATMENT OF APHTHOUS ULCERS		
Agent	Dispense	Label
Fluocinonide ointment 0.05% and hydrocortisone acetate oral paste	2- to 4-week supply; mix equal parts hydrocortisone acetate oral paste with fluocinonide ointment to form a compound.	Apply compound to ulcer(s) 5 to 6 times/day.
Fluocinonide gel 0.05%	2- to 4-week supply	Apply to ulcer(s) 5 to 6 times/day.
Clobetasol propionate ointment 0.05% and hydrocortisone acetate oral paste ¹¹	2- to 4-week supply; mix equal parts hydrocortisone acetate oral paste with clobetasol propionate ointment to form a compound.	Apply compound to ulcer(s) 2 times/day.
Dexamethasone elixir 0.5 mg/5 mL*	2- to 4-week supply	Use as an oral rinse 4 to 6 times/day (swish and expectorate) or apply directly to ulceration by saturating a gauze sponge and applying topically to lesion 5 to 10 minutes 4 times/day.

* Used for multiple ulcers or ulcers not easily accessible for topical application.

5. Other Ulcers

a. Diagnosis

RECOMMENDATION:

Diagnosis of oral ulceration due to other infectious agents, such as *Histoplasma capsulatum* (histoplasmosis), *Cryptococcus neoformans* (cryptococcosis), and *Aspergillus* organisms, should be made by biopsy and histologic examination.

b. Treatment

RECOMMENDATION:

Treatment should be based on identification of the causative organism.

D. Kaposi's Sarcoma

2. Diagnosis

RECOMMENDATION:

The diagnosis of Kaposi's sarcoma should be confirmed by either biopsy or identification of distinct clinical appearance.

E. Lymphoma

2. Diagnosis

RECOMMENDATION:

Diagnosis of oral mucosal lymphoma should be made by biopsy and histologic examination.

3. Treatment

RECOMMENDATION:

Patients with a diagnosis of oral lymphoma should be referred to a physician for further evaluation and treatment.

F. Salivary Gland Disease Associated With HIV Infection

RECOMMENDATION:

For patients with xerostomia, additional measures should be employed to prevent dental caries and periodontal disease. Such measures include topical fluoride therapy, chlorhexidine oral rinse, decreased sugar consumption, and meticulous oral hygiene. The use of saliva substitutes should also be considered.

G. Human Papillomavirus Infection

2. Diagnosis

RECOMMENDATION:

Diagnosis of HPV lesions should be made by routine biopsy and histologic examination.

H. Mucosal Melanin Pigmentation

2. Diagnosis

RECOMMENDATION:

For newly emerging or changing mucosal pigmented lesions, biopsy and histologic examination should be considered. However, most of these lesions can be presumptively diagnosed by appearance and observation over time.

REFERENCES

1. Ceballos-Salobrena A, Gaitan-Cepeda LA, Ceballos-García L, Lezama-Del Valle D. Oral lesions in HIV/AIDS patients undergoing highly active antiretroviral treatment including protease inhibitors: A new face of oral AIDS? *AIDS Patient Care STDS* 2000;14:627-635.
2. Patton LL. Sensitivity, specificity, and positive predictive value of oral opportunistic infections in adults with HIV/AIDS as markers of immune suppression and viral burden. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000;90:182-188.
3. Margiotta V, Campisi G, Mancuso S, Accurso V, Abbadessa V. HIV infection: Oral lesions, CD4+ cell count and viral load in an Italian study population. *J Oral Pathol Med* 1999;28:173-177.
4. Patton LL, McKaig RG, Eron JJ Jr, Lawrence HP, Strauss RP. Oral hairy leukoplakia and oral candidiasis as predictors of HIV viral load. *AIDS* 1999;13:2174-2176.
5. Greenspan D, Komaroff E, Redford M, Phelan JA, Navazesh M, Alves ME, et al. Oral mucosal lesions and HIV viral load in the Women's Interagency HIV Study (WIHS). *J Acquir Immune Defic Syndr* 2000;25:44-50.
6. Patton LL. Hematologic abnormalities among HIV-infected patients: Associations of significance for dentistry. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1999;88:561-567.
7. Centers for Disease Control and Prevention. 1997 USPHS/ISDA guidelines for the prevention of opportunistic infections in persons infected with the human immunodeficiency virus. *MMWR Morb Mortal Wkly Rep* 1997;46(RR-12):19.
8. Kaplan JE, Hanson DL, Navin TR, Jones JK. Risk factors for primary *Pneumocystis carinii* pneumonia in human immunodeficiency virus-infected adolescents and adults in the United States: Reassessment of indications for chemoprophylaxis. *J Infect Dis* 1998;178:1126-1132.
9. Centers for Disease Control and Prevention. 1993 Revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. *MMWR Morb Mortal Wkly Rep* 1992;41(RR-17):1-19.

10. Jacobson JM, Greenspan JS, Spritzler J, Ketter N, Fahey JL, Jackson JB, et al. Thalidomide for the treatment of oral aphthous ulcers in patients with human immunodeficiency virus infection. *N Engl J Med* 1997;336:1487-1493.
11. Lozada-Nur F, Miranda C, Maliksi R. Double-blind clinical trial of 0.05% clobetasol propionate in orabase and 0.05% fluocinonide ointment in orabase in the treatment of patients with oral vesiculoerosive disease. *Oral Surg Oral Med Oral Pathol* 1994;77:598-604.
12. Navazesh M, Mulligan R, Komaroff E, Redford M, Greenspan D, Phelan J. The prevalence of xerostomia and salivary gland hypofunction in a cohort of HIV-positive and at-risk women. *J Dent Res* 2000;79:1502-1507.
13. Mulligan R, Navazesh M, Komaroff E, Greenspan D, Redford M, Alves M, et al. Salivary gland disease in human immunodeficiency virus-positive women from the WIHS study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000;89:702-709.

FURTHER READING

American Dental Association and American Academy of Oral Medicine. Dental management of the HIV-infected patient. *J Am Dent Assoc* 1995;(Suppl):34-39.

Greenspan JS, Greenspan D, eds. *Oral Manifestations of HIV Infection*. Chicago, IL: Quintessence Publishing Co, Inc; 1995.

Greenspan JS, Barr CE, Sciubba JJ, Winkler JR, for the USA Oral AIDS Collaborative Group. Oral manifestations of HIV infection: Definitions, diagnostic criteria and principles of therapy. *Oral Surg Oral Med Oral Pathol* 1992;73:142-144.

CHAPTER 3

CLINICAL MANIFESTATIONS AND MANAGEMENT OF HIV-RELATED PERIODONTAL DISEASE

I. INTRODUCTION

RECOMMENDATION:

The most important components in the management of HIV-associated gingival and periodontal disease should be the removal of local irritants from the root surfaces, débridement of necrotic tissues, and appropriate use of antibiotics.

II. LINEAR GINGIVAL ERYTHEMA (LGE)

B. Diagnosis

RECOMMENDATION:

The diagnosis of LGE is made on the basis of distinctive clinical characteristics (see *Presentation*).

III. NECROTIZING ULCERATIVE PERIODONTITIS (NUP)

B. Diagnosis

RECOMMENDATION:

The diagnosis of NUP is made on the basis of distinct clinical characteristics (see *Presentation*).

C. Treatment

RECOMMENDATIONS:

Systemic antibiotics, such as metronidazole, tetracycline, clindamycin, amoxicillin, and amoxicillin-clavulanate potassium, should be combined with débridement of necrotic tissues.

As systemic antibiotics increase the patient's risk of developing candidiasis, concurrent, empiric administration of an antifungal agent should be considered.

Frequent appointments are appropriate and recommended in the acute and healing stages of NUP to perform the necessary periodontal therapies, to assess tissue response, and to monitor the patient's oral hygiene performance.

A thorough periodontal examination should be performed at each recall session for any patient with a history of NUP. Because the periodontal maintenance program for patients with HIV should be individualized, oral health care providers should consider plaque control, past severity of disease, and evidence of case stabilization when determining the frequency of recall visits.

IV. NECROTIZING ULCERATIVE GINGIVITIS (NUG)

RECOMMENDATION:

Necrotizing ulcerative gingivitis should be treated similarly to NUP.

REFERENCES

1. Friedman RB, Gunsolley J, Gentry A. Periodontal status of HIV-seropositive and AIDS patients. *J Periodontol* 1991;62:623-627.
2. Klein RS, Quart AM, Small CB. Periodontal disease in heterosexuals with acquired immunodeficiency syndrome. *J Periodontol* 1991;62:535-540.
3. Swango P, Kleinman DV, Konzelman JL. HIV and periodontal health: A study of military personnel with HIV. *J Am Dent Assoc* 1991;122:49-52.
4. Glick M, Muzyka BD, Salkin LM, Lurie D. Necrotizing ulcerative periodontitis: A marker for immune deterioration and a predictor of the diagnosis of AIDS. *J Periodontol* 1994;65:393-397.
5. Novak MJ. Necrotizing ulcerative periodontitis. *Ann Periodontol* 1999;4:74-78.

CHAPTER 4

ORAL AND MAXILLOFACIAL SURGERY

I. TREATMENT PLANNING GUIDELINES

RECOMMENDATIONS:

As part of informed consent, the clinician should carefully explain the risks and benefits of oral and maxillofacial surgery to all patients.

Because of the multiple systemic effects caused by HIV infection and its progression to AIDS, the clinician should perform a complete medical history prior to each surgical encounter and should consult with the patient's medical provider.¹ The medical history should include determination of CD4 counts and viral loads and a review of all drugs that the patient is taking.

All surgical procedures should be performed in a manner that minimizes bleeding and avoids introducing oral pathogens into the deeper fascial planes and oral spaces.

II. POST-OPERATIVE COMPLICATIONS AND ANTIBIOTIC PROPHYLAXIS

RECOMMENDATIONS:

The clinical decision to prescribe antibiotic therapy should be made on an individualized basis.

Antibiotics should be used judiciously in patients with HIV disease. Routine antibiotic prophylaxis is contraindicated.

For patients with prosthetic joint replacements, the dentist should consult with the patients' medical provider to determine the need for antibiotic prophylaxis.⁵

If the neutrophil count in a patient is <500 cells/mm³, the oral health care provider should administer antibiotics pre-operatively and post-operatively in consultation with the primary care provider. An individual assessment of risk related to the patient's condition and type of surgery should be performed.

Microbiologic culture and sensitivity testing should be ordered for patients with persistent oral infection who are not responding to antibiotic therapy.

For HIV-infected patients with heart valve abnormalities or other indications for increased risk of bacterial endocarditis, dentists should use the standard protocol established by the American Dental Association and the American Heart Association.⁶

A. Extractions

RECOMMENDATION:

All factors associated with post-operative complications should be considered whenever extractions are contemplated.

B. Bleeding Tendencies

RECOMMENDATIONS:

Bleeding abnormalities should be considered when evaluating HIV-infected patients for invasive procedures. Practitioners should keep in mind that, although rare, excessive bleeding could occur even if hemostasis seems normal.

For patients with increased bleeding tendencies, hemostatic function assessment is recommended before extensive surgery.¹³ Consultation with the patient's primary care provider is also recommended.

For patients with a previous history of abnormal bleeding or clinical signs of severe thrombocytopenia, a preoperative platelet count should be obtained for surgical procedures, such as extractions, scaling and curettage, and biopsy.⁹

III. IMPLANT SURGERY

RECOMMENDATION:

Implant surgery may be performed successfully in patients with HIV infection. The benefits of such treatment should, however, be assessed carefully in relation to HIV disease stage.

REFERENCES

1. Centers for Disease Control and Prevention. 1997 Revised guidelines for performing CD4+ T-cell determinations in persons infected with human immunodeficiency virus (HIV). *MMWR Morb Mortal Wkly Rep* 1997;47:1-29.
2. Dodson TB, Perrott RK, Gongloff LB, Kaban LB. Human immunodeficiency virus serostatus and the risk of post-extraction complications. *J Oral Maxillofac Surg* 1994;23:100-103.
3. Robinson G, Wilson SE, Williams RA. Surgery in patients with acquired immunodeficiency syndrome. *Arch Surg* 1987;122:170-175.
4. Robinson PG, Cooper H, Hatt J. Healing after dental extractions in men with HIV infection. *Oral Surg Oral Med Oral Pathol* 1992;74:426-430.
5. American Dental Association and American Academy of Orthopaedic Surgeons. Advisory statement: Antibiotic prophylaxis for dental patients with total joint replacements. *J Am Dent Assoc* 1997;128:1004-1008.
6. Dajani AS, Taubert KA, Wilson W, Bolger AF, Bayer A, Ferrieri P, et al. Prevention of bacterial endocarditis: Recommendations by the American Heart Association. *JAMA* 1997;277:1794-1801. Available at: <http://216.185.112.5/presenter.jhtml?identifier=1729>
7. Glick M, Abel SN, Muzyka BC, DeLorenzo M. Dental complications after treating patients with AIDS. *J Am Dent Assoc* 1994;125:296-301.
8. Dental management of the HIV-infected patient. *J Am Dent Assoc* 1995;(Suppl):1-40.
9. Patton LL. Hematologic abnormalities among HIV-infected patients: Associations of significance for dentistry. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1999;88:561-567.
10. Okabe K, Nakgawa K, Yamamoto E. Factors affecting the occurrence of bacteremia associated with tooth extraction. *Int J Oral Maxillofac Surg* 1995;24:239-242.
11. Parkhurst CL, Lewis DA, Clark DT. Prophylactic application of an intra-alveolar socket medicament to reduce postextraction complications in HIV-seropositive patients. *Oral Surg Oral Med Oral Pathol* 1994;77:331-334.
12. Porter SR, Scully C, Luker J. Complications of dental surgery in persons with HIV disease. *Oral Surg Oral Med Oral Pathol* 1993;75:165-167.
13. Spivak JL. *Fundamentals of Clinical Hematology*. Philadelphia, PA: Harper & Row; 1980:299.

FURTHER READING

- Glick M. *Dental Management of Patients With HIV*. Chicago, IL: Quintessence Publishing Co Inc; 1994.
- Little J, Fulace D, et al. *Dental Management of the Medically Compromised Patient*. St Louis, MO: Mosby; 1997.
- Miller EJ, Dodson TB. Do HIV-positive patients have an increased risk for serious odontogenic infections? *J Oral Maxillofac Surg* 1996;54(Suppl 8):80.
- Scannel KA. Surgery and human immunodeficiency virus disease. *J AIDS* 1989;2:43-53.
- Schmidt B, Kearns G, Perrot D, et al. Infection following treatment of mandibular fractures in human immunodeficiency virus seropositive patients. *J Oral Maxillofac Surg* 1995;53:1134-1139.

CHAPTER 5

ORAL HEALTH MANAGEMENT IN CHILDREN AND ADOLESCENTS WITH HIV INFECTION

II. THE ORAL HEALTH CARE PROVIDER'S ROLE IN THE PRIMARY CARE TEAM

RECOMMENDATIONS:

Because of the variety of oral health problems associated with HIV disease, the oral health care provider should be involved in the initial management and be a participant of the primary care team for pediatric patients.

The oral health care provider should inform the appropriate primary care team members of the patient's oral health needs and concerns, the patient's role in oral health maintenance, and the oral health care provider's ability to deliver specialized preventive and restorative treatment and recall care.

Because of the unpredictable nature of acute and chronic illnesses associated with HIV infection, the oral health care provider should always strive to prevent oral problems. Understanding the psychosocial, medical, and family issues that can be associated with HIV illness, obtaining a detailed medical and social history of the child, performing an oral-facial-dental evaluation at each visit, and establishing an appropriate recall interval for assessment of the patient's oral health status are key to the preventive strategy. Recall intervals should be based on each patient's caries history, plaque and debris index, and treatment adherence.

As part of the primary care team, the oral health care provider should discuss with the pediatrician dental preventive and restorative strategies for the child, work collaboratively to resolve questions of contraindications to dental procedures, and coordinate medical procedure appointments with dental procedure appointments.

Oral health care providers should request that the pediatrician or team members keep them informed of important changes in the patient's status. The oral health care provider should be furnished with current information that may influence dental treatment, including staging of the patient's disease, medications, nutritional status, and blood serum laboratory tests (e.g., recent CD4/CD8 counts, viral load, and platelet count).

As the oral health care provider may be the first health professional to suspect HIV infection in the pediatric patient, the oral health care provider should know the findings suggestive of HIV infection (see Table 5-1). Identified findings should be reported to the child's pediatrician.

The oral health care provider should understand the psychosocial issues that confront HIV-infected children and adolescents.

TABLE 5-1
FINDINGS SUGGESTIVE OF HIV INFECTION IN PEDIATRIC PATIENTS

- Uncommon, unusual, or frequent oral infections or lesions
- Delay in age-appropriate neurological development (e.g., speech, fine and gross motor skills)
- Delay in age-appropriate weight and height gain
- Respiratory distress (past and present)
- Recurrent infections (e.g., pneumonia) or hospitalizations
- Chronic low-grade fevers, chronic diarrhea (i.e., more than 3 stools per day for 2 weeks)

Oral health care providers should make every effort to avoid disruption or discontinuation of a patient's treatment that may result from family-related problems. Problems related to treatment adherence should be discussed with the primary care team to solve what may be a complicated issue(s).

III. FAMILY ISSUES

RECOMMENDATION:

Oral health care providers should make every effort to avoid disruption or discontinuation of a patient's treatment as a result of family-related problems.

IV. INITIAL INTAKE VISIT

RECOMMENDATIONS:

The oral health care provider should consider HIV counseling and testing of children whose birth parents' medical or social histories are suggestive of HIV.

If the child's HIV status has not been disclosed or if HIV infection is strongly suspected:

- **The medical history should be re-evaluated with questions about risk factors for HIV infection in the family.**
- **The patient's or caregiver's consent should be obtained in order to attain the patient's HIV medical information.**

The dental provider should be sensitive to and respect the caregiver's willingness to discuss HIV status with the child and should try to ascertain whether the child has been informed of his/her HIV status, even if the subject has not been discussed.

V. CONSIDERATIONS FOR PREVENTION AND TREATMENT PLANNING

RECOMMENDATIONS:

The oral health care provider should follow the American Association of Pediatric Dentistry (AAPD) guidelines for anticipatory guidance.²

Treatment modifications for children and adolescents should be based on the patient's medical status rather than HIV status.

Oral health care providers should be aware that children with HIV infection might experience an increased risk of oral disease, including soft-tissue and hard-tissue pathology.

The oral health care provider should let the caregiver know that all health-related information is essential for the safe treatment of the child and will be kept confidential.

The oral health care provider should review the treatment plan with the family or caregivers and set dates of treatment. It is important that families are provided with a clear idea of what is expected regarding their involvement in the care plan. The oral health care provider should supply caregivers with necessary oral, dietary, or medication knowledge.

The following indicators should be considered in devising the best treatment strategy for each patient:

- **Medical status—The patient's medical status should be updated at each visit to accurately track progression of disease and changes in medication protocols.**
- **Frequency of visits—Visits should be scheduled according to the needs and caries risk factors of each patient.**
- **Preventive strategy—Early and aggressive preventive therapy (e.g., sealants) and reinforcement of good oral hygiene at home can help avoid or minimize caries (see Table 5-2).**

TABLE 5-2 ORAL HEALTH PREVENTIVE STRATEGIES BY AGE	
Age Group	Preventive Strategies
Infants	Supervised use of bottles for feeding or pacification, management of cariogenic medication
Children	Dental sealants, optimal systemic and topical fluoride, fluoride varnish supplementation, management of nutrition and medication, low frequency and chronicity of fermentable carbohydrate intake (e.g., juices, milk, dietary supplements)
Adolescents	Removing residue of food and medicine through rinsing with water or mechanical cleansing, management of nutrition and medication, addressing barriers that prevent adolescents from accessing care

VI. ORAL LESIONS AND PERIODONTAL DISEASE IN THE PEDIATRIC PATIENT

RECOMMENDATION:

Oral health care providers should be prepared to recognize, identify, and manage oral lesions in children with HIV infection.

Oral health care providers should refer to the primary medical care provider for diagnoses, observation, and management of any lesions that disrupt the integrity of the oral mucosa in children.

A. Oral Candidiasis

RECOMMENDATIONS:

Oral rinsing, nutritional and medication management, and cleansing the entire mucosal and gingival tissue area beginning at birth may help control oral *Candida* and delay the progression of oral candidiasis.

Oral hygiene instructions should be given to patients and caregivers, and, for young children, the caregiver's role in the oral hygiene process should be stressed. Residue of food and medicine on the oral tissues (mucosa, gingiva) and on the teeth should be removed by the caregivers of young children and independently by older children through rinsing with water or mechanical cleansing.

See Table 5-3 for topical and systemic medications.

TABLE 5-3 TOPICAL AND SYSTEMIC ANTIFUNGAL MEDICATIONS FOR PEDIATRIC POPULATIONS WITH ORAL CANDIDIASIS*	
Agent	Dosage
Topical	
Oral nystatin suspension	2 to 5 mL, 4 to 6 times/day
Clotrimazole troches	10-mg tablet, 3 to 5 times/day
Systemic	
Fluconazole	3 to 5 mg/kg once daily
Itraconazole	100 mg/day orally for children >3 years of age
Ketoconazole	5 to 10 mg/kg/day

* Five to 7 days of therapy is often sufficient to clear oral candidiasis.

B. Angular Cheilitis

RECOMMENDATION:

As angular cheilitis may represent poor diet and poor feeding in addition to fungal infection, the oral health care provider should assess the diet, oral habits, and/or HIV status of a child with angular cheilitis.⁵ Consultation should occur with the primary care team regarding support and vitamin supplementation, which may improve this condition in children.

D. Caries and Gingivitis

RECOMMENDATION:

Extensive caries or chronic demineralization should be treated definitively with comprehensive restorative care.

E. Xerostomia

RECOMMENDATION:

Sugarless gum and frequent consumption of water or highly diluted fruit juices should be used to alleviate xerostomia.

F. Aphthous Ulcers

RECOMMENDATION:

Topical corticosteroids should be used to manage aphthous ulcers (see Chapter 2: *Diagnosis and Management of Soft-Tissue Lesions*).

G. Herpetic Stomatitis

RECOMMENDATION:

Supportive therapies, such as topical applications of medicaments, should be used to encourage hydration and the intake of food (see Chapter 2: *Diagnosis and Management of Soft-Tissue Lesions*).

VII. ADOLESCENCE AND HIV INFECTION

RECOMMENDATIONS:

Oral health care providers should be aware of the direct and indirect factors that place adolescents at risk for acquiring HIV infection.⁸

Oral health care providers should strive to gain the trust of adolescent patients at the outset of the professional relationship.

To care adequately for adolescents with HIV infection, oral health care providers should first address the barriers that prevent adolescents from accessing care, including payment, consent, and confidentiality.

Adolescents with HIV infection not already in care should be referred for immediate consultation with an appropriate health care center AIDS team or HIV Specialist.

REFERENCES

1. Belman AL, Diamond G, Dickson D, Horoupian D, Llena J, Lantos G, et al. Pediatric acquired immunodeficiency syndrome: Neurologic syndromes. *Am J Dis Child* 1988;142:29-35.
2. American Academy of Pediatric Dentistry. AAPD Reference Manual 2000-2001. Available at: <http://www.aapd.org>
3. Centers for Disease Control and Prevention. Revised classification of HIV infection in children (birth-13 yrs.). *MMWR Morb Mortal Wkly Rep* 1994;43(RR-12).
4. Scully C, el-Kabir M, Samaranayake LP. *Candida* and oral candidosis: A review. *Crit Rev Oral Biol Med* 1994;5:125-157.
5. Nizel AE. *Nutrition in Clinical Dentistry*. 3rd ed. Philadelphia, PA: Saunders; 1989.
6. Ferguson FS, Archard H, Nuovo G, Nachman S. Hairy leukoplakia in a child with AIDS: A rare symptom case. *Am J Pediatr Dent* 1993;15:280-281.
7. Greenspan JS, Mastrucci MT, Leggott PJ, Freese UK, DeSouza YG, Scott GB, et al. Hairy leukoplakia in a child. *AIDS* 1988;2:143.
8. Hein K, Dell R, Futterman D, Rotheram-Borus MJ, Shaffer N. Comparison of HIV+ and HIV- adolescents: Risk factors and psycho-social determinants. *Pediatrics* 1995;95:96-103.
9. Committee for the Care of Children and Adolescents With HIV Infection. *Criteria for the Medical Care of Children and Adolescents With HIV Infection*. 4th ed. New York, NY: New York State Department of Health AIDS Institute; 2001. Available at: <http://www.hivguidelines.org>

FURTHER READING

- Asher RS, McDowell J, Acs G, Belanger G. Pediatric infection with the human immunodeficiency virus (HIV): Head, neck, and oral manifestations. *Special Car Dent* 1993;13:113-116.
- Bykov VL. Velocity and *Candida albicans* invasion into host tissues. *Mycoses* 1991;34:293-296.
- Ferguson FS, Berentsen B, Nachman S. Experiences of a pediatric dental program for HIV positive children: Oral manifestations and dental diseases observed in 58 children. In Greenspan JS, Greenspan D, eds. *Oral Manifestations of HIV Infection: Proceedings of the Second International Workshop on the Oral Manifestations of HIV Infection, January 31-February 3, 1993; San Francisco, California*. Chicago, IL: Quintessence Publishing Co; 1995.
- Ferguson FS, Nachman S, Berentsen B. Implications and management of oral diseases in children and adolescents with HIV infection. *N Y State Dent J* 1997;63:46-50.
- Ketcham L, Berkowitz R, McIlveen L, et al. Oral findings in HIV-seropositive children. *Pediatr Dent* 1990;12:143.
- Leggott P. Oral manifestations of HIV infection in children. *Oral Surg Oral Med Oral Pathol* 1992;73:187-192.
- Moniaci D, Cavallari M, Greco D, Bruatto M, Raiteri R, Palomba E, et al. Oral lesions in children born to HIV-1 positive women. *J Oral Pathol Med* 1993;22:8-11.
- Ramos-Gomez FJ, Greenspan D, Greenspan JS. Orofacial manifestations and management of HIV-infected children. *Oral Maxillofac Surg Child Adolesc* 1994;6:37-47.
- Rosenberg PS, Biggar RJ, Goedert JJ. Declining age at HIV infection in the United States [letter]. *N Engl J Med* 1994;330:789-790.
- Sherwood J, Gow NAR, Gooday GW, Gregory DW, Marshall D. Contact sensing in *Candida albicans*: A possible aid to epithelial penetration. *J Med Vet Mycol* 1992;30:461-469.

CHAPTER 6

INFECTION CONTROL

I. GENERAL INFECTION CONTROL PRACTICES

RECOMMENDATIONS:

Dental providers and dental office staff should be trained in the principles and practices of infection control.

The clinician should consult infection control guidelines for dentistry recommended by any of the following: the Centers for Disease Control and Prevention (CDC),¹ the American Dental Association (ADA),² or the Organization for Safety and Asepsis Procedures (OSAP).³ In addition, the clinician should comply with the bloodborne standards set by the Occupational Safety and Health Administration (OSHA)⁴ and the mandatory infection control training set by the New York State Board of Regents.⁵

Universal or standard infection control precautions should be carried out for all dental patients and all dental procedures.⁶ Special precautions are not necessary for patients with HIV because all patients are considered to be potentially infected with a bloodborne pathogen.

Workplace and engineering controls, including hand-washing, effective barrier precautions, proper use of personal protective equipment and safety devices, appropriate cleansing and sterilization of instruments and dental equipment/environmental surfaces, and both the safe handling and disposal of sharps, should be emphasized.

OSHA mandates that employers must offer employees free-of-charge immunization against hepatitis B. Employees who choose not to be immunized must sign a declination statement.⁴

Because adult chicken pox is associated with high morbidity, employees who are not immune should be encouraged to be immunized against the varicella zoster virus (VZV). For information about immunization against other pathogens, refer to CDC's Immunization of Health Care Workers recommendations.⁷

New York State requires that dentists and dental hygienists receive explicit training in infection control every 4 years, with particular emphasis on the modes and risks of HIV transmission in the dental environment.⁵ In addition, OSHA mandates annual employee training about bloodborne pathogen transmission and an annual update of the clinic occupational exposure control plan.⁴ Oral health care providers must follow practice regulations as defined by the Americans with Disabilities Act.⁸ Those citing infection control concerns as grounds for not treating HIV-infected patients are subject to censure or prosecution (see Chapter 7: *Ethical and Legal Considerations*).

II. AIRBORNE INFECTION CONTROL (TUBERCULOSIS)

RECOMMENDATIONS:

The risk for transmission of *Mycobacterium tuberculosis* in most dental settings is quite low. Oral health care providers should conduct a periodic risk assessment, and TB infection control policies for each dental setting should be based on this risk assessment.⁹

Oral health care providers should defer all non-emergency dental treatment in patients with suspected pulmonary or laryngeal TB disease until they are confirmed by a physician to be non-infectious. Emergency dental treatment for infectious patients should be performed in an isolation room with appropriate ventilation, and providers should wear appropriate personal respiratory protection. Appropriate respiratory equipment has been defined by CDC.⁹

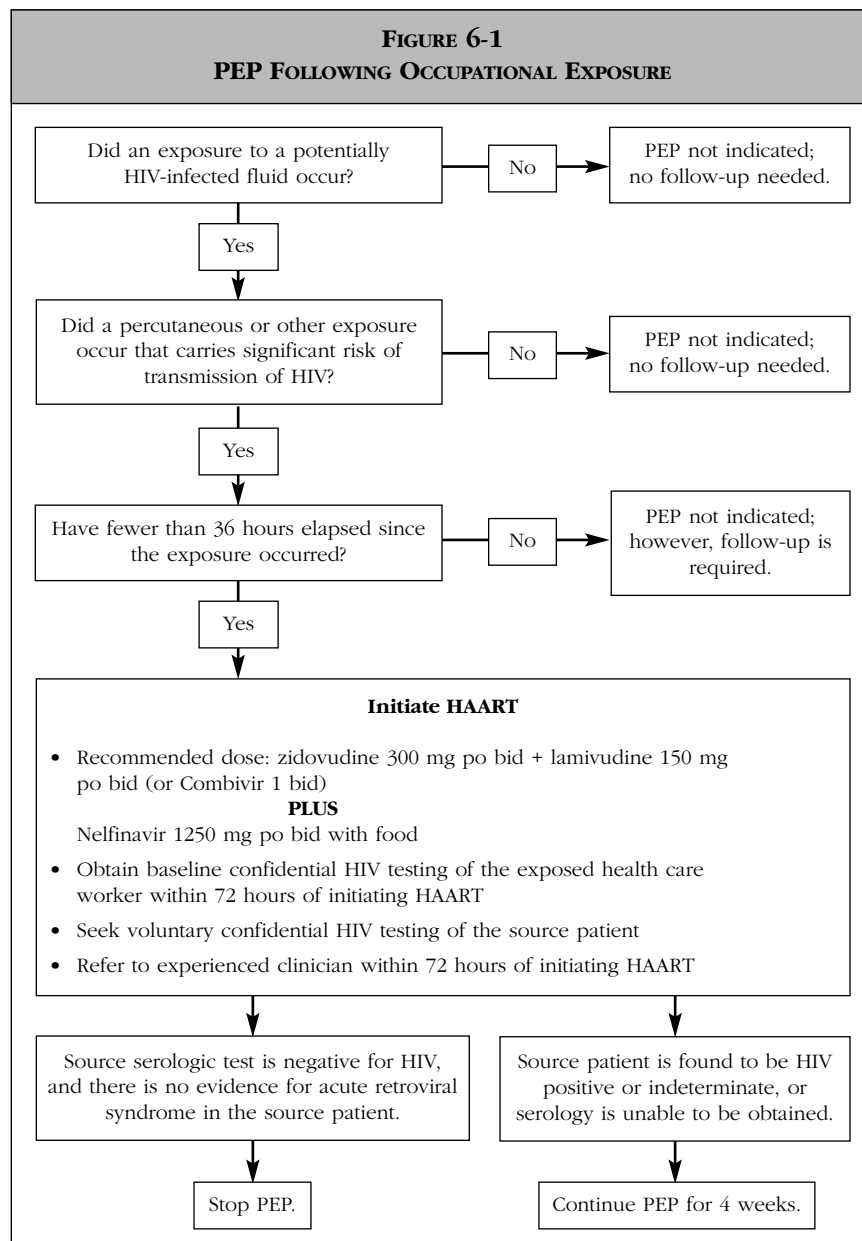
Routine dental treatment should not be deferred for patients with the following conditions: extrapulmonary TB, latent TB infection in the absence of clinical disease, or MAC disease. Routine dental treatment also should not be deferred for patients with tuberculosis who are currently receiving treatment and are no longer infectious.

All untested oral health care providers should receive a baseline tuberculin skin test, unless they are already PPD+ or recent exposure dictates testing sooner. The frequency of retesting of oral health care providers is based on the risk assessment of the facility in which they practice.⁹

III. BLOODBORNE INFECTION CONTROL (OCCUPATIONAL EXPOSURE)

RECOMMENDATIONS:

Employers are mandated by OSHA to have an exposure control plan.⁴ The plan must be reviewed and revised annually and updated regularly, and it should include consideration and use of commercially available safer devices shown to reduce the risk of occupational exposure.^{17,18}



Reprinted from *HIV Prophylaxis Following Occupational Exposure*. New York State Department of Health AIDS Institute, 2001.

Following any occupational exposure (either percutaneous or mucocutaneous), risk assessment for transmission of bloodborne pathogens (HBV, HCV, and HIV), indication for post-exposure prophylaxis (PEP) for HIV, and appropriate follow-up of the exposed individual should be based on the New York State Department of Health AIDS Institute guidelines, *HIV Prophylaxis Following Occupational Exposure*, which can be downloaded and reviewed at <http://www.hivguidelines.org>.¹⁹

A procedure should be in place in the event that an occupational exposure occurs. Dental worker education about preventing and treating occupational injuries should be ongoing.

See Figure 6-1.

IV. WATERBORNE INFECTION CONTROL

RECOMMENDATION:

Oral health care providers should be aware of the potential for dental unit waterline contamination.

V. HEALTH CARE WORKERS WITH HIV OR OTHER INFECTIOUS DISEASES

RECOMMENDATIONS:

Health care workers should be counseled about the importance of learning their HIV and hepatitis B virus (HBV) status if they potentially have been infected through personal behavior or occupational exposure.

Courts have interpreted the State's Human Rights Law³³ and federal law (the Americans with Disabilities Act³⁴) to hold that HIV infection alone is not sufficient justification to limit the professional duties of health care professionals unless specific factors compromise a worker's ability to meet infection control standards or to provide appropriate patient care.

Health care workers with HIV infection who are exposed to TB should be aware of their increased risk for developing active tuberculosis and should therefore observe appropriate precautions.

HIV-infected health care workers with patient contact should practice standard infection control procedures.

REFERENCES

1. Centers for Disease Control and Prevention. Recommended infection-control practices for dentistry, 1993. *MMWR Morb Mortal Wkly Rep* 1993;42(RR-8). Available at: <http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/00021095.htm>
2. American Dental Association Infection Control Guidelines. Available at: <http://www.ada.org/prof/prac/issues/topics/iconrol.html>
3. Organization for Safety and Asepsis Procedures. Infection Control Guidelines. Available at: <http://osap.org/>
4. US Department of Labor, Occupational Safety and Health Administration. Controlling Occupational Exposures to Bloodborne Pathogens in Dentistry. 1992: Publication 3129. Available at: <http://www.osha-slc.gov/Publications/Osha3129.pdf>
5. Office of the Professions. New York State Education Requirement. Mandatory Training Related to Infection Control. Available at: <http://www.op.nysed.gov:80/icmemo.htm>
6. Centers for Disease Control and Prevention. Update: Universal precautions for prevention of transmission of human immunodeficiency virus, hepatitis B virus and other bloodborne pathogens in health care settings. *MMWR Morb Mortal Wkly Rep* 1988;37:377-388. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00000039.htm>
7. Centers for Disease Control and Prevention. Immunization of Health Care Workers: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC) 1997;46(RR-18):1-42. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00050577.htm>

8. Americans with Disabilities Act. Available at: <http://www.usdoj.gov/crt/ada/adahom1.htm>
9. Centers for Disease Control and Prevention. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health care facilities. *MMWR Morb Mortal Wkly Rep* 1994;43(RR-13). Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00035909.htm>
10. Centers for Disease Control and Prevention. Division of Tuberculosis Elimination. Surveillance Reports. Reported tuberculosis in the United States, 1998. August 1999;15. Available at: <http://www.cdc.gov/nchstp/tb/surv/surv.htm>
11. Centers for Disease Control and Prevention. Prevention and treatment of tuberculosis among patients with human immunodeficiency virus: Principles of therapy and revised recommendations. *MMWR Morb Mortal Wkly Rep* 1998;47(RR20):1-51. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00055357.htm>
12. Kramer F, Sasse SA, Simms JC, Leedom JM. Primary cutaneous tuberculosis after a needlestick injury from a patient with AIDS and undiagnosed tuberculosis. *Ann Intern Med* 1993;119:594-595.
13. Genne D, Siegrist HH. Tuberculosis of the thumb following a needlestick injury [see comments]. *Clin Infect Dis* 1998;26:210-211.
14. US Department of Health and Human Services Public Health Service, Centers for Disease Control and Prevention, and National Institute for Occupational Safety and Health, DHHS September 1999, Publication No. 99-143. TB Respiratory Protection Program in Health Care Facilities, Administrator's Guide. Available at: <http://www.cdc.gov/niosh/99-143.html>
15. Phelan JA, Jimenez V, Tompkins DC. Tuberculosis. *Dent Clin North Am* 1996;40:327-339.
16. Centers for Disease Control and Prevention. Infection Control in Dentistry. Airborne Disease Transmission. Available at: <http://www.cdc.gov/ncccdphp/oh/ic-airborne.htm>
17. DOL, OSHA 29 CFR parts 1904 and 1952. Occupational Injury and Illness Recording and Reporting Requirements, Final Rule Federal Register. January 19, 2001.
18. DOL, OSHA CPL 2-2.44 D. Enforcement Procedures for the Occupational Exposure to Bloodborne Pathogens. November 5, 1999.
19. Medical Care Criteria Committee. *HIV Prophylaxis Following Occupational Exposure*. New York: New York State Department of Health AIDS Institute; 2001. Available at: <http://www.hivguidelines.org>
20. US Department of Health and Human Services Public Health Service, Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2000, Midyear Ed;12:No. 1.
21. Henderson DK, Chiarello LA, Dickinson GM, et al. SHEA Position Paper. Management of healthcare workers infected with hepatitis B virus, hepatitis C virus, human immunodeficiency virus, or other bloodborne pathogens. *Infect Control Hosp Epidemiol* 1997;18:349-363.
22. Beltrami M, Williams IT, Shapiro CN, Chamberland ME. Risk and management of blood-borne infections in health care workers. *Clin Microbiol Rev* 2000;385-407.
23. Centers for Disease Control and Prevention. Hepatitis B virus: A comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination: Recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR Morb Mortal Wkly Rep* 1991;40(RR-13):1-19. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00033405.htm>
24. Centers for Disease Control and Prevention. Case-control study of HIV seroconversion in health care workers after percutaneous exposure to HIV-infected blood: France, United Kingdom, and United States, January 1988—August 1994. *MMWR Morb Mortal Wkly Rep* 1995;44:929-933. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00039830.htm>

25. Centers for Disease Control and Prevention. Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. *MMWR Morb Mortal Wkly Rep* 2001;50(RR11):1-42. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm>
26. Chenowith CE, Gobetti JP. Postexposure chemoprophylaxis for occupational exposure to HIV in the dental office. *J Am Dent Assoc* 1997;128:1135-1151.
27. Medical Care Criteria Committee. *Viral Hepatitis*. New York: New York State Department of Health AIDS Institute; 2001. Available at: <http://www.hivguidelines.org>
28. Centers for Disease Control and Prevention. Hepatitis B virus: A comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination: Recommendations of the Immunization Practices Advisory Committee (ACIP)—Appendix A: Postexposure Prophylaxis for Hepatitis B. 1991;40(RR-13):21-25. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00033455.htm>
29. Centers for Disease Control and Prevention. Recommendations for the follow-up of health care workers after occupational exposure to hepatitis C virus. *MMWR Morb Mortal Wkly Rep* 1997;46:603-606. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00048324.htm>
30. Mills SE. The dental unit waterline controversy: Defusing the myths, defining the solutions. *J Am Dent Assoc* 2000;131:1427-1441.
31. US Department of Health and Human Services Public Health Service. Centers for Disease Control and Prevention suggested procedures for Dental Offices during boil-water advisories. December 23, 1998.
32. Centers for Disease Control and Prevention. Infection Control in Dentistry: Waterborne Disease Transmission. Available at: <http://www.cdc.gov/nccdphp/oh/ic-waterborne.htm>
33. New York State Human Rights Law, §292(21); 296(2).
34. Americans with Disabilities Act, 4 USC, §401 (1990).
35. New York State Department of Health Policy Statement and Guidelines to Prevent Transmission of HIV and Hepatitis B Through Medical/Dental Procedures. New York, NY: New York State Department of Health; 1992.

CHAPTER 7

ETHICAL AND LEGAL CONSIDERATIONS

I. ETHICAL CONSIDERATIONS

RECOMMENDATION:

A dentist practicing in New York State is bound by specific laws, including those outlined in the *Principles of Ethics and Code of Professional Conduct* of the ADA, the *Principles of Ethics and Code of Conduct* of the New York State Dental Association, and the code of ethics of the component society of which he/she practices.^{1,2}

RECOMMENDATION:

Providers and patients should have open discussions regarding treatment options and the potential sequelae of treatment choices.

II. LEGAL CONSIDERATIONS

RECOMMENDATION:

The ADA Principles of Ethics and Code of Professional Conduct states that all dentists are obligated to provide care to patients who seek it if the indicated treatment is within the scope of their practice.¹ Even if a practitioner is unfamiliar with management of HIV disease, routine care of an HIV-infected patient should not be refused, although referral to an experienced provider may be made.

REFERENCES

1. American Dental Association. *The Principles of Ethics and Code of Professional Conduct*. Chicago, IL: American Dental Association; 2000.
2. New York State Dental Association. *The Principles of Ethics and Code of Conduct*. Albany, NY; 1999.
3. New York State Public Health Law, Art 27-F.
4. New York State Public Health Law, §2782 (1) (d).

FURTHER READING

Dental Alliance for AIDS/HIV Care. *Principles of Dental Management for the HIV/AIDS Patient*. New York, NY. June 2000.

APPENDIX I

SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS

TABLE I-1 SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS		
Agent	Description	Adverse effects
Abacavir (Ziagen)	A nucleoside analogue reverse transcriptase inhibitor antiretroviral agent.	Hypersensitivity reaction is a serious and potentially fatal side effect. Clinical features include fever, skin rash, fatigue, malaise, gastrointestinal (GI) symptoms, arthralgia, cough and/or dyspnea.
Abacavir/lamivudine/zidovudine (Trizivir)	A combination of three nucleoside analogs.	GI symptoms, anorexia, insomnia, lab abnormalities, elevated liver enzymes, mild hyperglycemia, elevated triglycerides, headache, malaise, neuropathy, lactic acidosis, severe hepatomegaly with steatosis.
Acyclovir (Zovirax)	An antiviral used to treat herpes simplex viruses 1 and 2 and herpes zoster.	Nausea, diarrhea, headache.
Amprenavir (Agenerase)	A protease inhibitor antiretroviral agent.	GI intolerance, rash, headache, oral paresthesias, and fat redistribution. Interactions with many drugs: caution must be used when prescribing in combination with other medications. Adverse oral effect: Oral/perioral paresthesia.
Atovaquone (Mepron)	An antiprotozoal agent used to treat <i>Pneumocystis carinii</i> pneumonia.	Rash, nausea, diarrhea, headache. Adverse oral effects: Oral candidiasis, oral monilia.
Azithromycin (Zithromax)	An antibiotic used to treat <i>Chlamydia</i> and bacterial infections of the skin and respiratory tract. Used to prevent and treat <i>Mycobacterium avium</i> complex disease.	Nausea, muscle weakness, headache, and bone marrow suppression leading to anemia, leukopenia, and neutropenia. Adverse oral effects: Oral moniliasis, taste perversion.

TABLE I-1 SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS (CONT'D.)		
Agent	Description	Adverse Effects
Cidofovir (Vistide)	An antiviral used to treat cytomegalovirus infection. Given with saline and probenecid to diminish the risk of nephrotoxicity.	Nephrotoxicity, neutropenia, metabolic acidosis, uveitis, and ocular hypotony. Adverse oral effects: Oral candidiasis, stomatitis, aphthous stomatitis, mouth ulceration, dry mouth.
Ciprofloxacin (Cipro)	An antibiotic used to treat many common bacterial infections. Occasionally used in combination with other drugs to treat <i>Mycobacterium avium</i> complex disease.	GI symptoms, seizure, rash. Adverse oral effect: Painful, dry mouth.
Clarithromycin (Biaxin)	An oral macrolide used to prevent and treat <i>Mycobacterium avium</i> complex disease.	Diarrhea, nausea, abdominal pain (at high doses). Adverse oral effect: Abnormal taste.
Clindamycin (Cleocin)	An antibiotic used as an alternative treatment for <i>Pneumocystis carinii</i> pneumonia and toxoplasmosis.	Diarrhea.
Dapsone	An antileprotic drug used as an alternative in the treatment and prophylaxis of <i>Pneumocystis carinii</i> pneumonia.	Rash, fever, GI symptoms.
Delavirdine (Rescriptor)	A non-nucleoside reverse transcriptase inhibitor antiretroviral agent.	Rash (which could require drug discontinuation), headaches, and possible increase in transaminases. Adverse oral effects: Gingivitis, gum hemorrhage, increased saliva, mouth ulceration, stomatitis, tongue edema or ulceration.
Didanosine (ddI, Videx)	An antiretroviral nucleoside analogue reverse transcriptase inhibitor.	Pancreatitis, peripheral neuropathy, seizure, diarrhea. Adverse oral effect: Xerostomia.
Doxorubicin, liposome-encapsulated (Doxil)	An antineoplastic antibiotic used in chemotherapy for advanced Kaposi's sarcoma.	Neutropenia.
Dronabinol (THC, Marinol)	A cannabinoid used to treat wasting syndrome (anorexia, cachexia).	Asthenia, tachycardia, vasodilation, amnesia, anxiety, euphoria, hallucinations, paranoid reaction, somnolence. Adverse oral effect: Xerostomia.

TABLE I-1
SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS (CONT'D.)

Agent	Description	Adverse Effects
Efavirenz (Sustiva)	A non-nucleoside reverse transcriptase inhibitor antiretroviral agent.	Rash, central nervous system side effects, including confusion, abnormal thinking, impaired concentration, depersonalization, abnormal dreams and dizziness. Interactions with many drugs; caution must be used when prescribing in combination with other medications. Adverse oral effect: Dry mouth.
Erythropoietin (Procrit, Epogen)	A glycoprotein that stimulates the production of red blood cells. Used to treat AIDS-related anemias.	Headache, arthralgia, fatigue, fever, diarrhea.
Famciclovir (Famvir)	An antiviral used to treat herpes simplex and herpes zoster.	Nausea, diarrhea, headache.
Fluconazole (Diflucan)	An antifungal used to treat candidiasis and cryptococcosis.	Nausea, headache, rash, vomiting, diarrhea, prolonged prothrombin time with Coumadin. Adverse oral effect: Erythema multiforme syndrome.
Foscarnet (Foscavir)	A non-nucleoside analogue reverse transcriptase inhibitor used to treat cytomegalovirus infection and acyclovir-resistant herpes virus infections.	Impaired renal function, thrombocytopenia, anemia. Adverse oral effects: Oral ulcers, xerostomia, circumoral fasciculation due to hypocalcemia.
Ganciclovir (Cytovene)	An antiviral used for treatment or prevention of cytomegalovirus retinitis and other types of cytomegalovirus end-organ disease.	Neutropenia, thrombocytopenia, anemia, rash. Adverse oral effects: Aphthous stomatitis, mouth ulceration, tongue disorder.
Hydroxyurea (Hydrea)	A ribonucleoside reductase inhibitor.	Bone marrow suppression with leukopenia, anemia, and thrombocytopenia. GI intolerance, including stomatitis, nausea, vomiting, anorexia, diarrhea, and constipation.
Immune globulin	An agent used for treatment of primary immunodeficiencies.	Flushing, headache, dizziness, myalgia.
Indinavir (Crixivan)	A protease inhibitor antiretroviral agent.	Hyperbilirubinemia, kidney stones.

TABLE I-1 SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS (CONT'D.)		
Agent	Descriptions	Adverse Effects
Interferon α -2a (Roferon-A)	A protein that inhibits viral replication; used in treating Kaposi's sarcoma.	Flu-like symptoms, neutropenia, depression, confusion, anemia, paresthesia. Adverse oral effects: Xerostomia, gingivitis.
Interferon α -2b (Intron)	A protein that inhibits viral replication; used in treating Kaposi's sarcoma, hepatitis B, and hepatitis C.	Adverse oral effects: Xerostomia, gingivitis.
Itraconazole (Sporanox)	An antifungal used for treatment of blastomycosis, histoplasmosis, and candidiasis.	GI intolerance, rash, pruritis, headache, hepatitis. Adverse oral effects: Gingivitis, ulcerative stomatitis.
Ketoconazole (Nizoral)	An antifungal used to treat oral, vaginal, and esophageal thrush, candidiasis, and cryptococcosis.	Serious liver damage, reduced testosterone levels.
Lamivudine (3TC, Epivir)	A nucleoside analogue that appears to increase responsiveness to zidovudine in patients with previously zidovudine-resistant virus.	Hair loss.
Lopinavir/Ritonavir (Kaletra)	A combination protease inhibitor antiretroviral agent.	GI symptoms, diarrhea. Interactions with many drugs: caution must be used when prescribing in combination with other medications; elevations in cholesterol and triglycerides. Adverse oral effects: Dry mouth, ulcerative stomatitis.
Megestrol acetate (Megace)	A synthetic progestin used for treatment of wasting syndrome (anorexia, cachexia).	Most serious: hypogonadism, diabetes, adrenal insufficiency. Most common: diarrhea, impotence, rash, flatulence, asthenia, hyperglycemia, pain.
Nelfinavir (Viracept)	A protease inhibitor antiretroviral agent.	Diarrhea or loose stools, fat redistribution, increased levels of triglycerides and/or cholesterol, hyperglycemia, osteoporosis, possible increased bleeding with hemophilia. Adverse oral effect: Mouth ulceration.

TABLE I-1 SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS (CONT'D.)		
Agent	Description	Adverse Effects
Nevirapine (Viramune)	A non-nucleoside reverse transcriptase inhibitor antiretroviral agent.	The major toxicities are life-threatening cutaneous and hepatic reactions during the initial 8 weeks of treatment. Patients should be warned to promptly report symptoms of hypersensitivity reaction (fever, rash, arthralgias, myalgias).
Octreotide (Sandostatin)	A synthetic hormone used for controlling diarrhea.	Cholelithiasis or biliary sludge in 15% to 20%; GI symptoms, including nausea, vomiting, cramping, and diarrhea. CNS symptoms: headache, dizziness, lightheadedness, and asthenia. Hyperglycemia.
Pentamidine (Pentam for IV use; NebuPent for inhalation)	An antiprotozoal agent used in aerosol form as an alternative agent for <i>Pneumocystis carinii</i> pneumonia prophylaxis and in intravenous form for treatment of PCP.	Nephrotoxicity, hypotension, hypoglycemia, leukopenia.
Pyrimethamine (Daraprim)	An oral antiprotozoal drug used in combination with sulfadiazine for the treatment of toxoplasmosis.	Severe allergic reactions and rashes, anemia, leukopenia, thrombocytopenia, insomnia, diarrhea. Adverse oral effect: Atrophic glossitis.
Rifabutin (Mycobutin)	An antibiotic used to prevent and, in combination with other drugs, to treat <i>Mycobacterium avium</i> complex disease.	Neutropenia, eye and muscle irritation, discoloration of skin and urine. Adverse oral effects: Red discoloration of saliva, sputum.
Ritonavir (Norvir)	A protease inhibitor antiretroviral agent.	Elevations in cholesterol and triglycerides. Interactions with many drugs: caution must be used when prescribing in combination with other medications. Adverse oral effects: Periodontal abscess, dry mouth, gingivitis, mouth ulceration, oral moniliasis.
Saquinavir (Invirase or Fortovase)	A protease inhibitor antiretroviral agent.	Nephrolithiasis, diarrhea, abdominal discomfort, nausea. Adverse oral effect: Taste alteration.

TABLE I-1 SELECTED AGENTS USED TO TREAT HIV INFECTION OR RELATED CONDITIONS (CONT'D.)		
Agent	Description	Adverse Effects
Stavudine (d4T, Zerit)	A nucleoside reverse transcriptase inhibitor antiretroviral agent.	Peripheral neuropathy, paresthesias, insomnia, headache.
Trimethoprim/sulfamethoxazole (TMP/SMX) (Septra or Bactrim)	An antibiotic used to prevent and treat <i>Pneumocystis carinii</i> pneumonia.	Skin rash (which can progress to Stevens-Johnson syndrome), digestive disturbances, bone marrow suppression, liver impairment.
Zalcitabine (ddC, Hivid)	A nucleoside reverse transcriptase inhibitor agent.	Skin rash, peripheral neuropathy. Adverse oral effects: Oral ulcers, stomatitis.
Zidovudine (ZDV, AZT, Retrovir)	A nucleoside reverse transcriptase inhibitor agent. Recommended as the first agent to be used when antiretroviral therapy for AIDS is initiated.	Bone marrow suppression leading to anemia, leukopenia or neutropenia, nausea, muscle weakness, headache. Adverse oral effects: Dry mouth, taste perversion.
Zidovudine/Lamivudine (Combivir)	A combination of two reverse transcriptase inhibitors.	See zidovudine and lamivudine.

APPENDIX II

AUTHORIZATION FOR RELEASE OF CONFIDENTIAL HIV-RELATED* INFORMATION†

Confidential HIV-related information is any information indicating that a person had an HIV-related test or has HIV infection, HIV-related illness or AIDS, or any information that could indicate that a person has been potentially exposed to HIV.

Under New York State law, confidential HIV-related information can only be given to people you allow to have it by signing a written release or to people who need to know your HIV status in order to provide medical care and services, including medical care providers; persons involved with foster care or adoption; parents and guardians who consent to care of minors; jail, prison, probation, and parole employees; emergency response workers and other workers in hospitals, other regulated settings, or medical offices who are exposed to blood/body fluids in the course of their employment; and organizations that review the services you receive. The law also allows your HIV information to be released under limited circumstances (i.e., by special court order, to public health officials as required by law, and to insurers as necessary to pay for care and treatment). Anyone who illegally discloses HIV-related information may be punished by a fine of up to \$5,000 and a jail term of up to 1 year. For more information about HIV confidentiality, call the New York State Department of Health HIV Confidentiality Hotline at 1-800-962-5065.

If you sign this form, HIV-related information can be given to the people listed on the form, and for the reason(s) listed on the form. You do not have to sign the form, and you can change your mind at any time.

The law protects you from HIV-related discrimination in housing, employment, health care, or other services. For more information, call the New York State Division of Human Rights Office of AIDS Discrimination Issues at 1-800-523-2437 or (212) 417-5043 or the New York City Commission on Human Rights at (212) 306-7500. These agencies are responsible for protecting your rights.

* Human immunodeficiency virus that causes AIDS.

† Available for download at:

<http://www.health.state.ny.us/nysdoh/hiv aids/hivpartner/infopro v.htm#consent>

APPENDIX V

INFORMED CONSENT FORM

DOH-2556*

INFORMED CONSENT TO PERFORM AN HIV TEST

The decision to have an HIV test is voluntary. In order to have an HIV test in New York State, you must give your consent in writing at the end of this form.

TESTING FOR HIV INFECTION

Testing Methods:

There are a number of tests that can be done to show if you are infected with HIV, the virus that causes AIDS. Your provider or counselor can provide specific information on these tests. These tests involve collecting and testing blood, urine, or oral fluid. The most common test for HIV is the HIV antibody test.

Meaning of HIV Test Results:

- A negative result on the HIV antibody test most likely means that you are not infected with HIV, but it may not show recent infection. If you think you have been exposed to HIV, you should take the test again 3 months after the last possible exposure.
- A positive result on the test means that you are infected with HIV and can infect others.
- Sometimes the HIV antibody test result is not clearly positive or negative or may be a preliminary result. Your provider or counselor will explain this result and may ask that you give your consent for further testing.

Confidential or Anonymous HIV Testing:

When you decide to have an HIV antibody test, you may choose either a confidential or an anonymous test.

- If you want your test result to become part of your medical record so it can be used for your medical care, you can have a confidential test done. A confidential test requires that you provide your name.
- If you do not want anyone to know your test results or that you were tested, you can have an anonymous test at an anonymous test site. You will not be asked your name, address, or any other identifying information.
- If you receive an HIV positive test result at an anonymous test site approved by the NYS Department of Health, you will have the option of changing your test result to confidential by attaching your name to the test result. This will allow your test result to become part of your medical record.

Benefits to Testing:

There are many benefits to having an HIV test and knowing if you are infected.

If you receive an HIV negative test result:

- Your provider or counselor will tell you how to protect yourself from getting infected with HIV in the future.

If you receive an HIV positive test result:

- Your provider can give you medical care and treatment that can help you stay healthy and can manage your HIV illness.
- Your provider or counselor can tell you how to prevent passing the virus to your sexual or needle-sharing partners.
- You can increase your chances of staying healthy by eating a well-balanced, nutritious diet; getting enough sleep; exercising; avoiding alcohol, tobacco, and recreational drugs; reducing stress; and having regular check-ups.

If you are a woman who receives an HIV positive test result:

- If you are thinking about having a child, your provider will give you information to help you make informed choices about your health care and pregnancy.
- If you are pregnant, your doctor can provide the care you need and information about services and options available to you. Your provider can tell you about the risks of passing HIV infection to your baby, about medications given during pregnancy that can significantly reduce the risk of passing HIV to your baby, and the medical care available for babies who may be infected with HIV.
- If you have given birth to or breastfed a child since you were infected, your child will need to be tested for HIV and, if infected, may need additional care and treatment. Your provider can give you information about medical care available for children who may be infected with HIV.

Confidentiality of HIV Information:

If you take the HIV antibody test, your test results are confidential. Under New York State law, confidential HIV information can only be given to people you allow to have it by giving your written approval or to people who need to know your HIV status in order to provide medical care and services, including medical care providers; persons involved with foster care or adoption; parents and guardians who consent to care of minors; jail, prison, probation, and parole employees; emergency response workers and other workers in hospitals, other regulated settings or medical offices who are exposed to blood/body fluids in the course of their employment; and organizations that review the services you receive. The law also allows your HIV information to be released under limited circumstances (i.e., by special court order, to public health officials as required by law, and to insurers as necessary to pay for care and treatment).

Reporting Requirements:

Your name will be reported to the health department if you have a confirmed positive HIV antibody test result received through a confidential test, other HIV-related test results, a diagnosis of AIDS, or if you have chosen to attach your name to a positive test result at an anonymous site. The Health Department will use this information to track the epidemic and to better plan prevention, health care, and other services.

Notifying Partners:

If you test HIV positive, your provider will discuss with you the importance and benefits of notifying your partners of their possible exposure to HIV. It is important that your partners know that they may have been exposed to HIV so they can find out whether they are infected and benefit from early diagnosis and treatment. Your provider may ask you to provide the names of your partners and whether it is safe for you if they are notified. If you have been in an abusive relationship with one of these partners, it is important to share this information with your provider. For information regarding services related to domestic violence, call 1-800-942-6906.

- Under state law, your provider is required to report to the health department the names of any of your partners (present and past sexual partners, including spouses, and needle-sharing partners) of whom they know.
- If you have additional partners of whom your provider does not know, you may give their names to your provider so they can be notified.
- Several options are available to assist you and your provider in notifying partners. If you or your provider do not have a plan to notify your partners, the Health Department may notify them without revealing your identity. If this notification presents a risk of harm to you, the Health Department may defer the notification for a period of time sufficient to allow you to access domestic violence prevention services.
- If you do not name any partners to your provider or if a need exists to confirm information about your partners, the Health Department may contact you to request your cooperation in this process.

Confidentiality of HIV Test Results and Related Information:

If you feel your confidentiality has been broken or for more information about HIV confidentiality, call the New York State Department of Health HIV Confidentiality Hotline at 1-800-962-5065. Any health or social service provider who illegally tells anyone about your HIV information may be punished by a fine of up to \$5,000 and a jail term of up to 1 year.

The law also protects you from HIV-related discrimination in housing, employment, health care, or other services. For more information, call the New York State Division of Human Rights at 1-800-523-2437.

My questions about the HIV antibody test were answered. I agree to be tested for HIV.

Signature: _____

Date: _____

I provided pre-test counseling in accordance with Article 27-F of the New York State Public Health Law. I answered the above individual's questions about the test and offered him/her an unsigned copy of this form.

Signature: _____ Title: _____

Facility/Provider Name: _____

APPENDIX VI

INFORMED CONSENT FORM DOH-4054*

INFORMED CONSENT TO PERFORM AN HIV TEST AND AUTHORIZATION FOR RELEASE OF HIV-RELATED INFORMATION FOR PURPOSES OF PROVIDING POST-EXPOSURE CARE TO A HEALTH CARE WORKER EXPOSED TO A PATIENT'S BLOOD OR BODY FLUIDS

An employee has been exposed to your blood or a body fluid in a manner that may pose a risk for transmission of a bloodborne infection. Many individuals may not know whether they have a bloodborne infection because people can carry these viruses without having any symptoms. We therefore are asking for your consent to test for the presence of human immunodeficiency virus (HIV). You will also be tested for hepatitis B virus (HBV) and hepatitis C virus (HCV).

Under New York State law, HIV testing is voluntary and requires your consent in writing (consent can be withdrawn for the test at any time). There are a number of tests that can be done to show if you are infected with HIV. Your provider or counselor can provide specific information on these tests. These tests involve collecting and testing blood, urine, or oral fluid. The most common test for HIV is the HIV antibody test. In this circumstance, the test result will be used to help determine whether the exposed health care worker is now at risk for HIV and needs treatment for that exposure. Additional testing also will tell whether you are carrying HBV or HCV.

Meaning of HIV Test Results

- A negative result on the HIV antibody test most likely means that you are not infected with HIV but may not show recent infection. If you think you have been exposed to HIV, you should discuss this with the person requesting your consent for HIV testing, and you should take the test again 3 months after the last possible exposure.
- A positive result on the test means that you are infected with HIV and can infect others.
- Sometimes the HIV antibody test result is not clearly positive or negative. Your provider or counselor will explain this result and may ask that you give your consent for further testing.

The benefits of having an HIV test and your confidentiality protections and discrimination issues under the law are explained on the reverse side of this form. You also are being asked to authorize the release of confidential HIV-related information related to this request to the health professional, named below, who is treating the exposed health care worker. This is necessary to provide appropriate care and to counsel the worker about his or her risk of becoming infected and possibly infecting others. Under New York State law, except for certain people, confidential HIV-related information can only be given to persons you allow to have it by signing a release. These individuals are prohibited by law from subsequently disclosing these test results in a way that could reveal your identity. A list of people who can be given confidential HIV-related information without a release form appears on the reverse side of this form.

* Available for download at:
<http://www.health.state.ny.us/nysdoh/hiv aids/hivpartner/infoprov.htm#consent>

Name of exposed employee's (Optional) Name of exposed
health care provider to whom HIV test health care worker to whom HIV test
result will be disclosed result will be disclosed

Prior to executing this consent, you must be counseled about the implications of HIV testing and your confidentiality protections under the law.

I understand the purpose for which I am being asked to submit a specimen for HIV testing. My questions about the HIV test were answered. I agree to be tested for HIV, and I authorize release of this information to the exposed health care worker and his/her health care providers. This release is effective for one year after the date listed below.

Print name of the person to be tested

Date

Signature of the person to be tested or of the person consenting if different from the person to be tested

I provided pretest counseling in accordance with Article 27-F of the New York State Public Health Law. I answered the above individual's questions about the test and offered him/her an unsigned copy of this form.

Signature_____Title_____

Facility/Provider Name_____

Although confidential testing with identifiers is necessary for occupational exposure, New York State law requires that you be informed that HIV testing can be performed anonymously. For a list of anonymous sites, call 1-800-541-2437.

Benefits to Testing

There are many benefits to having an HIV test and knowing if you are infected.

If you receive an HIV negative test result:

- Your provider or counselor will tell you how to protect yourself from getting infected with HIV in the future.

If you receive an HIV positive test result:

- Your provider can give you medical care and treatment that can help you stay healthy and can manage your HIV illness.
- Your provider or counselor can tell you how to prevent passing the virus to your sexual or needle-sharing partners.
- You can increase your chances of staying healthy by eating a well-balanced, nutritious diet, getting enough sleep, exercising, avoiding alcohol, tobacco, and recreational drugs, reducing stress and having regular check-ups.

If you are a woman who receives an HIV positive test result:

- If you are thinking about having a child, your provider will give you information to help you make informed choices about your health care and pregnancy.
- If you are pregnant, your doctor can provide the care you need and information about services and options available to you. Your provider can tell you about the risks of passing HIV infection to your baby, about medications given during pregnancy that can significantly reduce the risk of passing HIV to your baby, and about the medical care available for babies who may be infected with HIV.
- If you have given birth to or breastfed a child since you were infected, your child will need to be tested for HIV and, if infected, may need additional care and treatment. Your provider can give you information about medical care available for children who may be infected with HIV.

Confidentiality of HIV Information:

If you take the HIV antibody test, your test results are confidential. Under New York State law, confidential HIV information can only be given to people you allow to have it by giving your written approval or to people who need to know your HIV status in order to provide medical care and services, including medical care providers; persons involved with foster care or adoption; parents and guardians who consent to care of minors; jail, prison, probation and parole employees; emergency response workers and other workers in hospitals, other regulated settings or medical offices who are exposed to blood/body fluids in the course of their employment; and organizations that review the services you receive. The law also allows your HIV information to be released under limited circumstances (i.e., by special court order, to public health officials as required by law, and to insurers as necessary to pay for care and treatment).

Reporting Requirements:

Your name will be reported to the New York State Health Department if you have a confirmed positive HIV antibody test result received through a confidential test, other HIV-related test results, a diagnosis of AIDS, or if you have chosen to attach your name to a positive test result at an anonymous site. The New York State Health Department will use this information to track the epidemic and to better plan prevention, health care, and other services.

Notifying Partners:

If you test HIV positive, your provider will discuss with you the importance and benefits of notifying your partners of their possible exposure to HIV. It is important that your partners know they may have been exposed to HIV so they can find out whether they are infected and can benefit from early diagnosis and treatment. Your provider may ask you to provide the names of your partners and whether it is safe for you if they are notified. If you have been in an abusive relationship with one of these partners, it is important to share this information with your provider. For information regarding services related to domestic violence, call 1-800-942-6906.

- Under state law, your provider is required to report to the Health Department the names of any of your partners (present and past sexual partners, including spouses, and needle-sharing partners) of whom they know.
- If you have additional partners of whom your provider does not know, you may give their names to your provider so they can be notified.
- Several options are available to assist you and your provider in notifying partners. If you or your provider do not have a plan to notify your partners, the Health Department may notify them without revealing your identity. If this notification presents a risk of harm to you, the Health Department may defer the notification for a period of time sufficient to allow you to access domestic violence prevention services.
- If you do not name any partners to your provider or if a need exists to confirm information about your partners, the Health Department may contact you to request your cooperation in this process.

Confidentiality of HIV Test Results and Related Information:

If you feel your confidentiality has been broken or for more information about HIV confidentiality, call the New York State Department of Health HIV Confidentiality Hotline at 1-800-962-5065. Any health or social service provider who illegally tells anyone about your HIV information may be punished by a fine of up to \$5,000 and a jail term of up to 1 year. The law also protects you from HIV-related discrimination in housing, employment, health care, or other services. For more information, call the New York State Division of Human Rights at 1-800-523-2437.