Practice Guidelines for the Treatment of People Living with HIV in General Dentistry

County of San Diego

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Commission on HIV Health Services

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What Viral Load and CD4 Cell Count Mean to the Dentist

The CD4 count and the viral load are the two laboratory markers that are used to monitor HIV infection. The CD4 cells are a subset of T-lymphocytes (synonyms are the T4 cell count or helper cells), which correlate with the patient's immune status. The normal value for adults is 750 – 1000 cells/mm^3. Patients with values less than 200 cells/mm^3 are considered to have advanced immunosuppression. Those with a value of less than 50 cells/mm^3 are considered to be in a very advanced stage and are usually symptomatic. Patients with low CD4 cell counts (less than 200 cells/ml) are at risk for developing the diseases associated with the acquired immune deficiency syndrome or AIDS (opportunistic infections and cancers.) Those with high counts (greater than 350 cell/mm^3) usually manifest no AIDS related illnesses.

The viral load is a test that measures the amount of viral ribonucleic acid (RNA) in a milliliter of plasma and reflects how much the virus is replicating. While the viral load does not indicate the immune status of the patient, it reflects the viral burden in the body and the risk of clinical progression and immunosuppression. The goal of therapy with antiviral drugs is to reduce the viral load to an "undetectable" value. The significance of an "undetectable" viral load is that minimal viral replication is occurring, and the virus is unlikely to deplete CD4 cells and cause immunosuppression. It also means that there is little risk of the virus being able to mutate which can result in drug resistance and treatment failure. Further, recent data have demonstrated that patients with sustained viral suppression do not transmit HIV to sexual partners. Based on these benefits and the improved safety and tolerability of newer antiviral treatment options, antiretroviral (ARV) therapy is recommended for all persons living with HIV, regardless of the CD4 count.

The dentist can play an important part in reminding patients of the need for regular follow up and monitoring of these markers.

For the dentist, the CD4 count indicates the immune status of the patient and the risk for certain conditions that can affect oral and overall health. The viral load itself does not directly influence dental treatment, but a detectable viral load may indicate to the dentist that the patient is not on an optimized ARV regimen and may benefit from timely follow-up with the primary care provider.

High viral loads may be present in a patient with early asymptomatic disease, while low viral loads can be seen in very advanced patients on suppressive antiviral therapy. The dentist can play an important role in reminding patients of the need for regular follow up and monitoring of these markers. It is recommended that viral load determinations be done at least every three to six months.

With respect to CD4 counts and viral load testing, best practices for the dentist include the following:

- At each visit, find out the patient's last CD4 count and viral load as part of the general health assessment.
- If the patient has not had viral load testing or a CD4 count in the last 12 months, determine if the patient is receiving primary care for HIV and if the patient is taking ARV medications. If there is concern that the patient has fallen out of care, direct the patient to resources for re-linkage to care.
- Remind patients of the need for regular follow-up and monitoring of CD4 counts and viral load.
- Reinforce the importance of adherence to the ARV medication regimen and the fact that missing just a few doses a month can result in the virus becoming resistant and harder to treat.

Antibiotic Prophylaxis

For patients who are living with HIV, there are no data supporting the need for routine antibiotic coverage to prevent bacteremia or septicemia arising from dental procedures. In fact, patients with AIDS have shown a higher incidence of allergic reactions to antibiotics and other medications, so it may endanger the patient's health by over-prescribing antibiotics.

Prophylactic antibiotics should not be prescribed routinely for the dental visit when the HIV infection is well-controlled. The American Heart Association (AHA) guidelines for antibiotic prophylaxis should be followed as with any patient. Consult the patient's physician to determine the need for antibiotic prophylaxis for the patient with multiple co-morbidities and with prosthetic joint replacements or intravascular devices. As with any patient, it is the standard of care to investigate all possible drug interactions before prescribing antibiotics or other medications for patients who are living with HIV.

Medical Assessment

Annual Health History

Many different oral mucosal lesions have been associated with HIV infection. Some, such as candidiasis and hairy leukoplakia, may indicate HIV disease progression. Medications used for treatment of HIV and associated diseases or prophylaxis of opportunistic infections may have significant adverse effects or may interact with other prescribed medications. To develop an appropriate treatment plan, the oral health care provider should obtain complete information about the patient's health and medication status. Past and/or present use of tobacco, alcohol, and other substances affects oral health, and such information should be collected during the (initial or updated) annual health history.

If there is any doubt about the accuracy of the information provided by a patient, the dentist should contact the patient's physician.

Annual Extra-Oral (Head and Neck) Examination

Patients who are living with HIV may develop associated skin manifestations and cervical lymphadenopathy along with bilateral salivary gland enlargement. Therefore, in addition to oral soft-tissue examinations, extra-oral head and neck examination should be performed routinely.

When to Contact the Patient's Primary Care Physician

It is recommended that the dental provider consult with the patient's physician when additional information is needed to safely provide dental care. This is handled the same way as a consultation request for any other medical condition.

- It is the standard of care to ask the patient about any health conditions, and to collect information about the status of each condition.
- It is also the standard of care to ask the physician to confirm or provide more complete medical information to that already obtained from the patient if needed.
- When medical conditions are well controlled, it is up to the dental care provider, based on his or her diagnosis of the patient's treatment needs, to determine the need for a consultation with the patient's physician.
- The dental health provider should use the medical history and laboratory test results to decide if treatment should occur in a hospital setting. Such a decision should be made in consultation with the patient's physician.
- If a patient with advanced HIV disease does not know the most recent CD4 count or viral load, the dentist should contact the physician for the correct information, and then determine whether to provide routine care or only emergency care at that time.
- If there is any doubt about the accuracy of the information provided by the patient (i.e., inconsistent or illogical answers to questions about medical history), the dentist should contact the patient's physician.
- If the patient's symptoms have changed, the dentist should consult with the physician to review the impending care and determine if treatment modifications are needed. For example, if there is liver or kidney involvement, the dentist may need to adjust the dosage of analgesics or antibiotics prescribed.

- The medical history should be updated on a regular basis to ensure all medical changes are noted. The medication list should also be updated, as dosages and regimens are subject to change. Sometimes medications and dosages may need to be clarified with the physician of record.
- Thrombocytopenia, anemia, and hepatobiliary diseases may occur in the course of HIV disease progression and with opportunistic infections. Laboratory tests prior to extensive surgical intervention should be obtained.

Treatment Considerations

Modifications of Dental Therapy

Discriminatory practices, such as the modification of dental treatment based solely on a patient's HIV status, are prohibited. However, if the patient's medical condition is compromised, treatment adjustments may be necessary, as would be the case with any medically compromised patient. The dentist should determine what treatment modifications, if any, are necessary. It is essential for all practitioners to understand that most people living with HIV, even if symptomatic, can be treated safely in a typical dental office or clinic.

- A pre-treatment antibacterial mouth rinse will reduce intraoral bacterial load, especially for those patients with periodontal disease.
- A six-month recall schedule should be instituted to monitor any oral changes. If the patient is severely immunosuppressed (i.e., CD4 count of ‹100 cells/mm^3), a shorter recall period such as a three-month interval should be considered.
- Oral hygiene and the use of silver diamine fluoride (SDF) are important in a medically compromised patient, as poor hygiene may be responsible for more rapid progression of oral disease. A proactive attitude and an emphasis on prevention should be encouraged. Dental treatment should also be prioritized based on the patient's health and circumstances (e.g. patients without the ability to tolerate long appointments, ability to perform oral hygiene, etc. should be treated with SDF to arrest existing caries and restored with a glass ionomer cement when necessary until more definitive treatment can be comfortably and appropriately provided).
- Infectious diseases, such as Hepatitis B, Hepatitis C, or Tuberculosis, should be ascertained and preventative protocols followed.
- Severely or terminally ill patients, for example, will require alterations in care similar to those in patients suffering from other conditions that cause debilitating illness, such as cancer or mental health impairment. These cases frequently lend themselves to minimally invasive dentistry and include the use of SDF and restoration with a fluoride-releasing glass ionomer material.

It is essential for all practitioners to understand that most HIV patients, even if symptomatic, can be treated safely in a typical dental office or clinic.

Annual Periodontal Examination

Oral health care is an important component of the management of patients with HIV infection. A poorly functioning dentition can adversely affect the quality of life, complicate the management of medical conditions, and create or exacerbate nutritional and psychosocial problems. When the oral cavity is compromised by the presence of pain or discomfort, maintaining adherence to complicated ARV therapy regimens becomes more difficult.

Gingival/periodontal disease, specifically linear gingival erythema (LGE) and necrotizing ulcerative periodontitis (NUP), have been associated with HIV infection. There is now evidence that these diseases also occur in HIV-negative immunocompromised individuals and are not specific to HIV infection. The prevalence of these two diseases remains unclear with current estimates of occurrence among HIV-infected individuals in the 5-10% range. There is some evidence that NUP is associated with a low CD4 count (<200 cells/mm^3). Early recognition of periodontal problems allows treatment that can prevent progression of these conditions, including severe attachment/bone loss.

> HIV-associated gingivitis has been renamed linear gingival erythema (LGE) and HIV-associated periodontitis has been renamed necrotizing ulcerative periodontitis (NUP).

Annual Updated Treatment Plan

A comprehensive treatment plan that includes preventive care and maintenance should be developed and discussed with the patient. Various treatment options should be discussed and developed in collaboration with the patient. As with all patients, a treatment plan appropriate for the patient's health status, financial status, and individual preference should be chosen. Medications may interfere with dental treatment and cause adverse effects, such as decreased salivary flow, altered liver function, and bone marrow suppression, resulting in anemia, thrombocytopenia, and neutropenia.

Phase 1 Treatment Plan Completion

Phase 1 treatment includes procedures related to prevention, maintenance, and/or elimination of oral pathology that results from dental caries or periodontal disease. This may include minimally invasive dentistry to include caries control using SDF, restorative treatment, basic periodontal therapy (non-surgical), basic oral surgery that includes simple extractions and biopsy, non-surgical endodontic therapy, and space maintenance and tooth eruption guidance for transitional dentition. Dental services that are part of Phase 1 Treatment as indicated as "Primary" in the County of San Diego, Health and Human Services Agency Ryan White Primary Care Medical Care Allowable Dental Services List.

Community and migrant health center oral health programs seek to increase access to oral health

care for the underserved. Completing Phase 1 Treatment Plans within twelve months addresses two fundamental areas within these dental programs: 1) the need to perform a comprehensive oral health exam that culminates with an accompanying treatment plan and 2) assuring that quality care is incorporated in the process of completing needed treatment in a timely manner. Completion of the Phase 1 Treatment Plan facilitates the identification of contributing and restricting factors and practical low-cost improvement options relevant to significant areas listed above. With access to codes associated with comprehensive oral exams and Patient Treatment Completion (PTC), most information management systems will be able to provide an average length of time associated with completion of treatment. With this information, staffing patterns, financial costs (overhead expenses) and efficiency of the oral health program can be assessed. These additional benchmarks could also be measured across health center programs at the local, regional, and national levels. The ultimate goal is to measure and assure that health centers routinely and systematically deliver comprehensive, quality oral health services, and patient treatment is completed within a reasonable amount of time.

Completion of Phase 1 Treatment Plan within 12 months is comprehensive in that subsequent performance analysis can broach a number of significant areas, such as: appointment scheduling, ratio of oral health providers to dental operatories, ratio of oral health providers to support staff, collaboration with medical colleagues emphasizing oral health as an essential component of an interdisciplinary approach to patient care, prioritization of patients and/or procedures, general productivity and efficiency.

Additional clarification is available on pages 13-15 of the HAB HIV Oral Health Performance Measures document: https://hab.hrsa.gov/sites/default/files/hab/clinical-quality-management/oralhealthmeasures.pdf.

Medications in HIV

HIV Medicine is a dynamic field and knowledge of ARV medications is constantly evolving. It should be emphasized that long-term clinical data on drug interactions does not exist for many of the newer medications. It is very important to keep an updated list of a patient's ARV medications as it may change. Patients taking some ARV medications may suffer from photophobia, so the dental team can make them more comfortable by avoiding a direct light source at the patient's eyes or offering dark glasses during the treatment. In addition, these patients may suffer from xerostomia as a side effect from some of the ARV medications. Use of prescription medications such as pilocarpine and bethanechol as salivary gland stimulants should be considered. Excellent oral hygiene home care, topical fluoride and frequent hygiene recall visits, as well as nutritional counseling and saliva enhancers (sugarless gum, water, and saliva substitutes) will be critical for

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prevention of periodontal disease and dental caries. Patients should also be assessed for consumption of unexpected sources of sugar such as over the counter medications including products like antacids (e.g. Tums, Rolaids); cough drops; suspensions (e.g. Nystatin); and, fungal troches (e.g. Mycelex). All of these may contribute to dental caries.

Currently, there are no known drug interactions between ARV medications and local anesthetics used in general dentistry. There are, however, some medications (especially certain sedative-hypnotics) that are prescribed by dentists or used in the office that may be contraindicated in patients taking ARV medications. It is recommended that the dental care provider consult a reference that thoroughly discusses drug side effects and interactions prior to prescribing any medications or consult with the patient's primary care provider.

More information on specific ARV medications is available at:

- https://aidsinfo.nih.gov/drugs
- https://medlineplus.gov/hivaidsmedicines.html
- http://hivinsite.ucsf.edu/InSite?page=ar-drugs

To look at specific drug-drug interactions, excellent clinical tools include:

- http://www.hiv-druginteractions.org
- http://hivinsite.ucsf.edu/insite?page=ar-00-02

Oral Health Education: Caries Prevention and Smoking

A higher risk of dental caries in patients with HIV may be caused by decreased salivary flow, which may occur as a result of salivary gland disease or as a side effect of a number of medications. Also, some topical antifungal medications have high sugar content, possibly resulting in increased susceptibility to caries. In these cases, the frequent application of fluoride varnish (up to five times per year) or targeted applications of SDF several times a year as needed should be considered. The adverse effects of using tobacco should be discussed with the patient. If the patient is a tobacco user, cessation should also be discussed.

For in-office consumer and provider materials on tobacco cessation programs, dentists can access https://smokefree.gov/help-others-quit/health-professionals.

Oral health education may be provided and documented by a licensed dentist, dental hygienist, dental assistant and/or dental case manager.

Nutritional Counseling

Because of certain oral conditions, people living with HIV may have difficulty consuming a balanced diet. The patient may suffer from changes in taste and decreased ability to chew and swallow because of drug-induced xerostomia. This can lead to gastrointestinal upset and nausea, further inhibiting the intake of a balanced diet. It is the role of the dentist to recognize oral manifestations, which are associated with nutritional deficiencies that can cause intraoral manifestations such as vitamin B 12, folic acid, etc. Nutritional supplements or referral to the patient's physician or a registered dietitian may be necessary. Some areas to be aware of include:

- Poor oral intake of food or fluid
- Difficulty chewing and swallowing due to continuous mouth sores resulting from candidiasis, herpes simplex, aphthous ulcers, etc.
- Severe dental caries
- Changes in perception of taste or smell
- Patient complaints of economic inability to meet caloric and nutrient needs

Post-Exposure Prophylaxis (PEP)

Most occupational HIV exposures do not result in the transmission of HIV. There have been no documented reports of transmission from a dentist to a patient. Documentation of the event and assessment of risk remain important. The person who is exposed should be referred immediately to a physician who can provide counseling, testing, and appropriate medications. The interval within which PEP should be initiated for optimal efficacy is not known, but it should be started as soon as possible, ideally within 24-36 hours and no later than 72 hours following the exposure. The need for PEP should be treated as a medical emergency.

Please refer to 2013 guidelines at https://www.jstor.org/stable/10.1086/672271#metadata_info_tab_contents.

Management of Occupational Blood Exposure

- Wash wounds and skin with soap and water
- Flush mucous membranes with water
- The incident should be reported to a supervisor if applicable and should be documented

in an injury/exposure log

- Report to a medical provider for testing, and access to PEP

Basic Overview:

Warmline: 800-933-3413

PEPline: 888-448-4911

Perinatal HIV Hotline: 888-448-8765

Determine whether high or low risk depending on source

- Low titer exposure
- Higher titer exposure

Medications

- Start within hours of exposure (as soon as possible)
- Triple therapy for 4 weeks

Baseline Labs to Monitor for Adverse Reactions

- Pregnancy test if applicable
- Complete Blood Count with differential and platelets
- Urinalysis
- Renal Function Tests (Blood Urea Nitrogen and Serum Creatinine)
- Liver Function Tests (Aspartate and Alanine Aminotransferase, Alkaline Phosphatase, Total Bilirubin)

Monitor

- Baseline
- If combination antigen-antibody testing is used, blood should be tested for HIV at 6 weeks and 4 months following exposure.
- If antibody testing is used, test for HIV at 6 weeks, 12 weeks and 24 weeks. (Note: combination antigen-antibody HIV testing is generally used now)

The National Clinicians' Post-Exposure Prophylaxis Hotline is the PEPline. This excellent resource for questions is open 9:00am-8:00pm Eastern Time Monday through Friday and 11:00am-8:00pm Eastern Time on weekends and holidays. Their number is (888) 448-4911.

Discrimination and Legal Issues

Referrals to a specialist or to a hospital setting must always be based on the clinical needs of the patient, not the ignorance or fear of the dentist, staff, or other patients. The legal obligation of the dental provider is to refer patients for testing and follow-up.

It is a violation of the Americans with Disabilities Act, California law, and the law of some local jurisdictions, and of the ethical standards of the California Dental Association and the American Dental Association to refuse to care for patients with HIV because of fear of the risk of infection.

Privacy

Many patients are reluctant to disclose HIV status to the dentist because they fear discrimination, even when they understand that full disclosure is essential for providing the best possible care.

- Dentists **must** establish an atmosphere in which patients feel comfortable in disclosing their status by indicating on the medical intake form that patients are not discriminated against on the basis of disability, and that all medical information disclosed is confidential.
- Dentists are responsible for training staff to ensure that all patient information is kept confidential and is in accordance with all state laws and the Health Insurance Portability and Accountability Act (HIPAA).
- A thorough discussion of HIV privacy law, including practice tips for protecting the privacy of dental records, can be found in the Schulman article in the Journal of the California Dental Association: https://pubmed.ncbi.nlm.nih.gov/7508498/
- HIPAA guidelines are found at https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/index.html.
- Dentists should also refer to information available from the California Department of Health Services, Office of AIDS at https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OAmain.aspx.
- In the state of California, written consent of the patient is not required for exchange of treatment-related information between health care providers, as long as that information is obtained for the patient's benefit. However, many medical and dental offices are reluctant to provide lab data over the phone because of the especially sensitive nature of the information. You can more easily obtain medical information related to patient treatment if you offer to fax or mail a consent form.

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Selected Websites for HIV/AIDS Information

Sites of Particular Interest to Dentists

HAB HIV Performance Measures: Oral Health
https://hab.hrsa.gov/sites/default/files/hab/clinical-quality-management/oralhealthmeasures.pdf

American Dental Association
https://www.ada.org/en

HIVdent
http://www.hivdent.org/

National Institute of Dental & Craniofacial Research
http://www.nidcr.nih.gov/

Pacific AIDS Education and Training Center
http://paetc.org/

American Nursing Association Safe Needles Save Lives
https://www.nursingworld.org/practice-policy/work-environment/health-safety/safe-needles/safe-needles-law/

The Internet drug index - side effects and drug interactions

- https://aidsinfo.nih.gov/drugs
- https://medlineplus.gov/hivaidsmedicines.html
- http://hivinsite.ucsf.edu/InSite?page=ar-drugs

Other Helpful Links

HIV-Insite (UCSF)
http://hivinsite.ucsf.edu/

AIDS Info: US Department of Health and Human Services
https://aidsinfo.nih.gov/

HIV/AIDS Prevention (CDC)
https://www.cdc.gov/hiv/dhap/about.html

Morbidity and Mortality Weekly Report (CDC)
http://www.cdc.gov/mmwr/

The Body - A Multimedia AIDS & HIV Information Resource
http://www.thebody.com/index.shtml

National HIV/AIDS Clinicians' Consultation Center (Warmline and PEP line)
http://www.nccc.ucsf.edu/

L.A. Public Health Organization: AIDS Info
http://publichealth.lacounty.gov/dhsp/

American Medical Association
http://www.ama-assn.org/

County of San Diego HIV/AIDS Reporting
https://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs/hiv_aids_epidemiology_unit/reporting.html