

UPUTSTVA ZA KONTROLU INFEKCIJE U STOMATOLOŠKIM ZDRAVSTVENIM USLOVIMA – PREGLED AKTUELNIH IZVORA

GUIDELINES FOR INFECTION CONTROL IN DENTAL HEALTH-CARE SETTINGS; A REVIEW OF CURRENT RESOURCES

*Richard D. Bebermeyer¹; Sharon K. Dickinson²,
Lisa P. Thomas³*

¹ PROFESSOR OF RESTORATIVE DENTISTRY & BIOMATERIALS THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER
AT HOUSTON DENTAL BRANCH 6516 M.D. ANDERSON BOULEVARD HOUSTON, TEXAS 77030, U.S.A.

²EL PASO COMMUNITY COLLEGE, P.O. BOX 20500, U.S.A.

³THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON DENTAL BRANCH, HOUSTON, TEXAS 77030, U.S.A.

Kratak sadržaj

Američki centri za prevenciju i kontrolu bolesti nedavno su objavili "Uputstva za kontrolu infekcije u stomatološkim zdravstvenim uslovima 2003".¹ Kao etalon, ovaj članak dopunjuje prethodne preporuke u vezi sa kontrolom infekcije u stomatološkim uslovima. Ove preporuke, bazirane na naučnim istraživanjima, analizirane su od strane autoriteta za kontrolu i prevenciju bolesti iz centara za kontrolu i prevenciju i drugih važnih ustanova kao što su akademije i profesionalne organizacije. Članak služi kao pregled ove važne publikacije sa ciljem da podrži i olakša optimalnu kontrolu i prevenciju infekcije u stomatološkim zdravstvenim uslovima uz pomoć uputstava za stomatološku praksu.

Ključne reči: kontrola infekcije, stomatološki, prenošenje, standardi, zakonodavstvo i jurisprudencija, stomatološka oprema, sterilizacija, dezinfekcija

Uvod

Američki centri za kontrolu i prevenciju bolesti su nedavno objavili "Uputstva za kontrolu infekcije u stomatološkim zdravstvenim uslovima 2003".¹ Kao etalon, ovaj članak dopunjuje prethodne preporuke iz 1993. godine i ukazuje

Abstract

The U.S. Centers for Disease Control and Prevention have recently published "Guidelines for Infection Control in Dental Health-Care Settings - 2003". This benchmark report updates previous recommendations and provides additional recommendations for infection control in dental health-care settings. These recommendations, based upon scientific research, were developed and reviewed by authorities on infection control and prevention from Centers for Disease Control and Prevention and other related public agencies, as well as from academia and professional organizations. This article serves as a review of this significant publication and others, and is intended to support and facilitate optimal infection control and prevention in dental health-care settings by providing guidelines for dental practice.

Key words: Infection control, dental, transmission, standards, legislation and jurisprudence, dental instruments, dental equipment, sterilization, disinfection

Introduction

The U.S. Centers for Disease Control and Prevention (CDC) recently published "Guidelines for Infection Control in Dental Health-Care Settings - 2003".¹ This benchmark report updates the previous 1993 recommenda-

na neke nove koje se baziraju na naučnim istraživanjima i odnose se na kontrolu infekcije u stomatološkim zdravstvenim uslovima.² Ove preporuke, koje služe kao uputstva za stomatološku praksu, analizirane su od strane autoriteta za kontrolu i prevenciju bolesti iz centara za kontrolu i prevenciju, i drugih važnih ustanova kao što su akademije i profesionalne organizacije. Sa promenama u toku bolesti, u proizvodima i protokolima, zakonima o zdravstvu, kontrola infekcije u zdravstvenim stomatološkim uslovima ostaje od presudnog značaja. Nedavna publikacija centra za kontrolu bolesti (CKB) dopunjuje i utvrđuje uputstva za kontrolu i prevenciju infektivnih bolesti koje se odnose na stomatološke zdravstvene uslove.

U ovoj publikaciji CKB-a značajne dopune i dodatne teme uključuju: radna ograničenja za zdravstvene radnike koji su inficirani ili izloženi infektivnim bolestima; kontaktni dermatitis i hipersenzitivnost na lateks; analize kvaliteta vode koja se koristi u stomatologiji; stomatološku radiologiju; pre-proceduralno ispiranje usne duplje pacijenata; lasersko/električni hirurški dim; tuberkulozu (TB); Creutzfeldt-Jakobovu bolest i druge prion-zavisne bolesti procenu programa za kontrolu bolesti; istraživačke aktivnosti.

U cilju obuke i edukacije o kontroli infekcije, često citirani i dostupni izvori uključuju publikaciju CKB-a iz 2003. godine i PowerPoint set slajd publikaciju CKB-a iz 2005. godine³. Ova slajd prezentacija nudi preporuke za preventivu i kontrolu infektivnih bolesti i očuvanje zdravlja osoblja, kao i bezbedonosne mere koje se odnose na kontrolu infekcije u stomatološkim uslovima. Ovo prezentaciono sredstvo – "Uputstva za kontrolu infekcije u stomatološkim zdravstvenim uslovima" nudi pregled mnogih principa kontrole infekcije što čini osnovu "Uputstva za kontrolu infekcije u stomatološkim zdravstvenim uslovima – 2003". Ovaj set slajd se može preuzeti kao PowerPoint prezentacija ili pogledati na Web strani CKB-a. <http://www.cdc.gov/OralHealth/infectioncontrol/guidelines/ppt.htm>.

Drugi dostupni izvori uključuju publikacije o Radnoj bezbednosti i zdravstvenoj administraciji (eng. – OSHA)⁴ i o Organizaciji bezbedne i aseptične procedure (eng. – OSAP).⁵ Kao što sam naslov ukazuje, OSAP se bavi promocijom kontrole infekcije i bezbedonosne

itions and provides additional recommendations, based on scientific research, for infection control in dental health-care settings.² These recommendations – which serve as guidelines for dental practice – were developed and reviewed by authorities on infection control and prevention from Centers for Disease Control and Prevention and other related public agencies, as well as from academia and professional organizations. With changes in disease trends, in products and protocols, and in dental health-care regulations, infection control in the dental health-care setting remains paramount. The CDC's recent publication serves to update and consolidate guidelines for control and prevention of infectious diseases related to the dental health-care setting.

In this CDC publication, the significant updates and additional topics include: work restrictions for health-care personnel infected with or exposed to infectious diseases; contact dermatitis and latex hypersensitivity; dental water-quality concerns; dental radiology; pre-procedural mouth rinsing for patients; laser/electro surgery plumes; tuberculosis (TB); Creutzfeldt-Jakob disease (CJD) and other prion-related diseases; infection-control program evaluation; and research considerations.

For purposes of infection control education and training, commonly used and readily available resources include the CDC 2003 guidelines publication, and a 2005 CDC infection control PowerPoint slide set publication.³ This slide presentation offers recommendations for preventing and controlling infectious diseases, and managing personnel health and safety concerns related to infection control in dental settings. This presentation tool, "Guidelines for Infection Control in Dental Health-Care Settings", and accompanying speaker notes provide an overview of many of the principles of infection control that form the basis for the CDC "Guidelines for Infection Control in Dental Health-Care Settings-2003". The slide set can be downloaded as a PowerPoint presentation or viewed on the CDC Oral Health Resources Web site at <http://www.cdc.gov/OralHealth/infectioncontrol/guidelines/ppt.htm>.

Other readily available resources include publications of the Occupational Safety and Health Administration (OSHA)⁴, and of the Organization for Safety and Asepsis Procedures (OSAP).⁵ As its mission statement reads, the OSAP is dedicated to promoting infection con-

procedure potvrđene naučnim i istraživačkim radom. OSAP pruža podršku zdravstvenim radnicima i javnosti održavanjem kvalitetnih predavanja i pružanjem informacija. Postoji i nominalna članska taksa za pristup najnovijim praktičnim i naučnim informacijama.

Ciljevi programa za kontrolu infekcije u stomatološkim zdravstvenim uslovima

Glavni cilj programa za kontrolu i prevenciju infekcije je smanjenje broja i tipova patogenih mikroba u stomatološkim zdravstvenim uslovima, uključujući i operaciono polje. Kad god je to moguće, neophodno je smanjiti ove mikrobe na nivo na kome telesni imunološki odgovor može da spreči infekciju. Glavni aspekti kontrole infekcije uključuju: lično zdravlje, prevenciju prenošenja patogena putem krvi, higijenu ruku, ličnu zaštitnu opremu, sterilizaciju i dezinfekciju stvari za ličnu higijenu pacijenta, kontrolu infekcije neposrednog okruženja, stomatološki ručni pribor, rentgen zuba i stomatološku laboratoriju.¹

Standardne predostrožnosti

Prethodne preporuke CKB-a u pogledu kontrole infekcije u stomatologiji fokusiraju se na riziku od prenošenja patogena putem krvi među osobljem i pacijentima. Ova uputstva, poznata kao univerzalne predostrožnosti, zasnivaju se na konceptu da se krv i telesne tečnosti mogu kontaminirati i stoga ih treba tretirati kao infekciju. Prethodne procedure uključivale su zaštitne mere ili ličnu zaštitnu opremu, rukovanje instrumentima, rubber dam i pranje ruku. Godine 1996. CKB je proširio ovaj koncept i promenio naziv u standardne predostrožnosti. Standardne predostrožnosti su integrisale i proširile elemente univerzalnih predostrožnosti u standardnu negu koja ima za cilj da zaštiti osoblje i pacijente od patogena koji se mogu širiti putem krvi; svih telesnih

trol and related health and safety policies and practices supported by science and research. OSAP supports health-care workers and the public through quality education and information resources. There is a nominal membership fee for access to the latest practical and scientific information.

Goals of an infection control program in dental health-care settings

The chief goal of an infection control and prevention program is to reduce the number and types of pathogenic microbes in the dental health-care setting, including the field of operation. Whenever possible, it is desirable to reduce these microbes to a level at which the body's immune response can prevent infection. The key aspects of infection control include: personnel health, preventing transmission of bloodborne pathogens, hand hygiene, personal protective equipment, sterilization and disinfection of patient-care items, environmental infection control, dental handpieces, dental radiology, and the dental laboratory.¹

Standard Precautions

Previous CDC Recommendations regarding infection control for dentistry focused on the risk for transmission of bloodborne pathogens among dental health care personnel (DHCP) and patients. These practices, referred to as Universal Precautions, focused on the concept that all blood and body fluids might be contaminated and should be treated as infectious. Previous practices included the use of protective barriers or personal protective equipment (PPE), the handling of instruments, use of rubber dam and handwashing. In 1996, the CDC expanded this concept and changed the term to Standard Precautions. Standard Precautions integrated and expanded the elements of Universal Precautions into a standard care designed to protect dental health care personnel and patients from pathogens that can be spread by blood; all body fluids, secretions, and excretions (except

tečnosti, sekreta i izlučevina (osim znoja), bez obzira da li one sadrže krv; non-intact skin; mukozne membrane. Saliva se oduvek smatrala potencijalno infektivnim materijalom.¹

Tok bolesti

Mikroorganizmi koji su relevantni za stomatološke zdravstvene uslove variraju – počev od onih koje je najteže uništiti do onih koje je najlakše uništiti – od bakterijskih spora (endospora), do mikobakterijum tuberkuloze, malih nelipidnih virusa (npr. HIV-a), gljivica, lipidnih virusa srednje veličine (uključujući hepatitis B virus), vegetativnih bakterija koje izazivaju više bolesti nego bilo koji drugi organizmi.

Premda je glavni cilj programa za kontrolu infekcije da speči unakrsnu kontaminaciju i infekciju uzrokovanu svim patogenima, osoblje stomatoloških klinika se fokusira na bolesti sa visokim stepenom mortaliteta i morbiditeta. Ove bolesti uključuju HIV/AIDS, hepatitis (A, B, C, D, E, itd.), tuberkulozu, SARS, prion-related bolesti kao što su Creutzfeldt-Jacobsova bolest. Svo osoblje stomatoloških klinika želi da nauči o ovim bolestima i koje su njihove implikacije u svakodnevnoj praksi. Podrobnije informacije se mogu naći u naučnoj literaturi, prvenstveno pregled implikacija prion diseases u stomatološkoj praksi se može naći u časopisu iz 2003.⁶ Zbog svih ovih bolesti, kontrola i prevencija bolesti je važnija nego ikad. Primena najbolje moguće procedure bi trebalo da bude cilj u bilo kojoj vrsti stomatološke prakse.

Izloženost patogenima koji se prenose putem krvi u radnim uslovima

U stomatološkim zdravstvenim uslovima, glavni načini prenošenja uključuju direktni kontakt sa inficiranom lezijom ili telesnim tečnostima kao što su krv ili saliva; indirektno prenošenje sa kontaminiranog objekta ili površine; prenošenje putem aerosola inficirane krvi, salive ili drugih oralnih ili nazofaringijalnih kapljica. Strategije za preventivu pre-

sweat), regardless of whether they contain blood; non-intact skin; and mucous membranes. Saliva has always been considered a potentially infectious material.¹

Disease trends

Microorganisms relevant to dental health-care settings range-listed from the most difficult to kill, to the easiest to kill – from the bacterial spores (endospores), to mycobacterium tuberculosis, to small non-lipid viruses (e.g. HIV), to fungi, to medium sized lipid viruses (including hepatitis B virus), to vegetative bacteria which cause more diseases than any other organisms.

Although the overall aim of an infection control program is to prevent cross-contamination and infection from all pathogens, dental health-care personnel (DHCP) naturally focus on those diseases with high morbidity or mortality. These diseases may include HIV/AIDS, hepatitis (A, B, C, D, E, etc.), tuberculosis, Sudden Acute Respiratory Syndrome (SARS), and prion-related diseases such as Creutzfeldt-Jacob disease (CJD). All DHCP will want to understand these diseases and their implications for dental practice. Further information can be found in the scientific literature; e.g. a summary review of the implications of prion disease in dental practice can be found in a 2003 journal article.⁶ With regard to all these diseases, infection control and prevention is more important than ever. Implementation of the best possible practices should be the objective for every dental practice.

Occupational exposures to bloodborne pathogens

In the dental health-care setting, the chief modes of disease transmission include direct contact with an infectious lesion, or a body fluid such as blood or saliva; indirect transmission from a contaminated object or surface; and transmission via aerosols of infectious blood, saliva or other oral or nasopharyngeal droplets. Strategies for prevention of disease transmis-

nošenja bolesti u stomatološkom radnom okruženju uključuju adekvatno uzimanje istorije – uz redovno dopunjavanje – od svakog pacijenta, kao i korišćenje zaštitne opreme kao što su rukavice, maske, ogrtači i zaštitne naočare. Od izuzetnog značaja je održavanje higijene ruku i vakcinacija/imunizacija.

Prevenција perkutanih povreda

Najbolji način prevencije prenošenja HIV-a i hepatitisa u stomatološkim zdravstvenim uslovima je izbegavanje kontakta sa krvlju. Perkutane povrede osoblja stomatoloških klinika se obično: 1) dešavaju van ustiju pacijenta, tako da je rizik od ponovnog kontakta sa tkivom pacijenta smanjen; 2) uključuju ograničene količine krvi; i 3) uzrokovane su borerima, špric iglama, laboratorijskim nožićima, i drugim oštrim instrumentima.¹ Premda je broj perkutanih povreda očigledno porastao od sredine 80-ih godina prošlog veka, veliki broj takvih kontakata u stomatološkoj praksi se može sprečiti. Sigurniji radni uslovi, instrumenti i njihov dizajn, praćeni boljom edukacijom osoblja, doprinose prevenciji perkutanih povreda u stomatološkim zdravstvenim uslovima.

Program zaštite osoblja nakon izloženosti u radnim uslovima i profilaksa

Svaka stomatološka ordinacija i laboratorija trebalo bi da ima plan lečenja kao sastavni deo kompletnog programa u cilju sprečavanja infekcije nakon kontakta sa krvlju u radnim uslovima. Ovaj detaljni plan bi trebalo da uključi vakcinaciju protiv hepatita B, a potom i protokol lečenja nakon kontakta sa krvlju i drugim telesnim tečnostima koji uključuje: 1) tip i količinu krvi i drugih telesnih tečnosti koje mogu osoblje stomatoloških klinika da izlože riziku od infekcije od perkutanih povreda; izvor infekcije – pacijent ili instrument; 3) vakcinaciju osoblja protiv hepatita B; 4) procedure za brzo opisivanje i procenu takve vrste izlaganja osoblja; i 5) postavljanje stručnjaka koji je kvalifikovan da pruži relevantne informacije i

sion in the dental health-care setting include taking an adequate health history – and updating it regularly – from each patient, and using personal protective equipment such as gloves, masks, gowns, and protective eyewear. Proper hand hygiene and vaccinations/immunizations are also essential.

Prevention of percutaneous injuries

The best way to prevent transmission of HIV and hepatitis in the dental health-care setting is to avoid occupational exposures to blood. Percutaneous injuries among DHCP usually: 1) occur outside the patient's mouth, thereby posing less risk for re-contact with patient tissues; 2) involve limited amounts of blood; and 3) are caused by burs, syringe needles, laboratory knives, and other sharp instruments.¹ Although percutaneous injuries have apparently decreased in frequency since the mid-1980s, the majority of the many exposures in dentistry are preventable. Safer work practices, safer instrumentation and design (e.g. safety syringes), along with increased DHCP education all contribute to prevention of percutaneous injuries in dental health-care settings.

Post-exposure management and prophylaxis

Each dental practice or laboratory should have a post-exposure management plan as a component of its complete program, to prevent infection after an occupational exposure to blood. This comprehensive plan should include hepatitis B vaccination and then post-exposure management protocols that describe 1) the type and amount blood or other body substance involved that can place the DHCP at risk for infection (e.g. via percutaneous injury); 2) the source-patient or instrument; 3) hepatitis B vaccination status of the exposed DHCP; 4) procedures for promptly reporting and evaluating such exposures; and 5) identify a health-care professional who is qualified to provide counseling and perform all medical evaluations and procedures in accordance with current

da izvrši procenu u skladu sa trenutnim preporukama Američke zdravstvene službe, uključujući i profilaksu nakon kontakta koja obuhvata hemoterapeutske lekove kada je to potrebno.¹ U publikaciji iz 2001. godine CKB opisuje osnovnu proširenu HIV profilaksu nakon kontakta sa telesnim tečnostima.⁷ Primena preporučene HIV profilakse za perkutane povrede je jasno opisana u "Journal of the American Dental Association" (JADA) iz 2002. godine.⁸ Nedavno izdata uputstva CKB-a pružaju dalje informacije za primenu ovog plana. Tabela plana lečenja nakon ove izloženosti dostupna je preko Organizacije za bezbednost i aseptične procedure i ADA-e.⁵ Ova tabela je značajan izvor koji uključuje plan za kontrolu izloženosti u svim radnim uslovima.

Regulatorne agencije i resursi u stomatološkim zdravstvenim uslovima

U SAD-u, vladine agencije i profesionalne organizacije svojim radom utiču na stomatološku praksu, kontrolu infekcije i druge zdravstvene i bezbedonosne uslove. Neke od ovih agencija/organizacija imaju regulatornu ulogu, dok su druge savetodavne. Pored izdavanja propisa, uputstava i preporuka, ove agencije/organizacije služe kao izvor aktuelnih informacija i edukativnog materijala. Za one koji žele detaljnije informacije, postoje veb-sajtovi koji pružaju najnovije informacije o kontroli i prevenciji infekcije koje mogu biti korisne za stomatološku praksu. U tabeli 1 nabrojane su neke od ovih agencija i organizacija koje su u službi osoblja stomatoloških klinika.

Zaključak

Sve stomatološke ustanove žele da rade u skladu sa aktuelnim uputstvima i regulativima. Uputstva i način rada prilagođavaju se konkretnim radnim uslovima. Standardna operativna procedura se prilagođava konkretnim potrebama u cilju bezbednog i efektivnog lečenja. U svakoj radnoj sredini se bira jedna

recommendations of the U.S. Public Health Service (PHS), including post-exposure prophylaxis with chemotherapeutic drugs when indicated.¹ The CDC described basic and expanded HIV post-exposure prophylaxis regimens in a 2001 publication.⁷ Use of recommended HIV post-exposure prophylaxis for percutaneous injuries was well described in the Journal of the American Dental Association in 2002.⁸ The CDC's recent guidelines, of course, make further recommendations for implementation of a comprehensive plan. A flow chart of a post-exposure management plan is available through the ADA or OSAP ("From Policy to Practice: OSAP'S Guide to the Guidelines").⁵ This chart is a valuable resource to include in the exposure control plan of each practice setting.

Regulatory agencies and resources for dental health-care settings

In the United States, government agencies and professional organizations influence dental practice, infection control and other health and safety issues. Some of these agencies/organizations have regulatory roles, and others are advisory. Besides issuing regulations, guidelines and recommendations, these agencies/organizations serve as a resource for current information and educational materials. For those who want to search for more detailed information, there are websites which provide up-to-date infection control and prevention information useful for the dental health-care setting. Table 1 lists some of these agencies and organizations which serve DHCP.

Conclusion

Each dental health-care setting will want to comply with current guidelines and regulations. Guidelines and policies can be adapted to each specific site. Standard operating procedures can be established for day-to-day management of these procedures for safe and effective patient care. Typically, each setting will appoint a leader in infection control to stay abreast of up-

Tabela 1. Agencije i organizacije u službi zdravstvenih radnika
Table 1. Agencies&Organizations Serving Dental Health Care Workers

Agency/Organization	Website (Accesed May 16, 2005)
Centers for Disease Control and Prevention (CDC)	http://www.cdc.gov/
Occupational Safety & Health Administration (OSHA)	http://www.osha.gov/
Environmental Protection Agency	http://www.epa.gov/
Food & Drug Administration	http://www.fda.gov/
National Institute for Occupational Safety and Health (NIOSH)	http://www.cdc.gov/niosh/homepage.html
Organization for Safety and Asepsis Procedures (OSAP)	http://www.osap.org/
American Dental Association (ADA)	http://www.ada.org/
American Dental Hygienists' Association (ADHA)	http://www.adha.org/
American Dental Assistants Association (ADAA)	http://www.dentalassistant.org/

osoba odgovorna za kontrolu infekcije, koja će pratiti aktuelne informacije o kontroli, primenjivati plan i obučavati osoblje. Izvori kao što je CKB, koji je objavio "Uputstva za kontrolu infekcije u stomatološkim zdravstvenim uslovima 2003", korisni su za analizu i samu stomatološku praksu.

dates in infection control, to implement the plan, and to train new and established dental health-care personnel. Resources such as the CDC's "Guidelines for Infection Control in Dental Health-Care Settings – 2003" will prove valuable for study and for dental practice.

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Adresa za korespondenciju/Address for correspondence:

Richard D. Bebermeyer, DDS; Professor of Restorative Dentistry & Biomaterials
The University of Texas Health Science Center at Houston Dental Branch
6516 M.D. Anderson Boulevard
Houston, Texas 77030, U.S.A.
E-mail address: Richard.D.Bebermeyer@uth.tmc.edu