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The role of the microbiology laboratory is essential to successful provision of patient care. Obtaining appropriate laboratory data allows clinicians the best opportunity to arrive at a definitive diagnosis in a timely manner, eliminates the need for further tests, and can offer specific treatment approaches with maximal potential for success. This article discusses the laboratory procedures useful for diagnosis of oral or maxillofacial infections, including collection and transport of microbial specimens, representative techniques and methods available for culture and diagnostic assays, diagnostic laboratory principles for specific types of microbial etiologies, antimicrobial sensitivity, quality control issues, and evaluation of reported findings.

Antibiotic Resistance	623
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The worldwide epidemic of microbial resistance to antibiotics poses a serious threat. The causes and mechanisms of this resistance (defined as reduced efficacy of the antibiotic) are known. Abuse of antibiotics in dental, medical, and community settings contributes significantly to these difficulties; however, the means to reduce our contribution to this problem are available.

Immunizations and Oral Health Care Providers	641
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Two very successful approaches aimed at preventing infectious diseases acquired in the dental office have introduced more vigilant infection control and barrier techniques as well as the use of specific immunizations. Special consideration is given to the

subgroup of dental professionals at increased risk for common diseases that may prevail because of the location and demographics of their practices. A brief review of the basic principles of immunology and immunization is covered as well as immunizations and the medically compromised oral health care worker, the medically compromised patient, new vaccines that may be in the offing, and the future role of immunization for dentists.

Antibiotic Prophylaxis: Problems in Paradise

665

Thomas J. Pallasch

Antibiotic prophylaxis has been overused massively in an attempt to prevent infections not likely to occur. Often, little attention has been paid to the principles of antibiotic prophylaxis established 40 years ago. How much this overuse has contributed to the world's difficulties with microbial antibiotic resistance is unknown. Because dentists are commonly blamed for errors of omission regarding antibiotic prophylaxis, an evidence-based assessment of this practice is appropriate.

Occupational Exposures to Human Immunodeficiency Virus, Hepatitis B Virus, and Hepatitis C Virus: Risk, Prevention, and Management

681

Jennifer L. Cleveland and Denise M. Cardo

The transmission of bloodborne viruses in dental health care settings can have serious consequences but is fortunately a rare event. After reviewing the risk of infection with the three bloodborne viruses of most concern in occupational transmission, human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV); this article reviews their prevention (eg, standard precautions, safety devices) and the management of potential exposures. Postexposure prophylaxis is discussed in detail.

Infection Control

697

Kathy J. Eklund

Infection control is a critical component of quality dental care. The fundamental principle of infection control—to prevent disease transmission—provides the foundation for any infection control program. An evidence-based approach to program development provides one strategy to develop effective policies, procedures, and practices consistent with this principle. This approach integrates scientific information, government and professional recommendations, federal, state, and local regulations, and practice-specific considerations that result in site-specific policies and standard operating procedures. This article provides an example of a systematic approach to infection control program development for dental health care settings.

Immune Suppression and Considerations for Dental Care 709
Ernesta Parisi and Michael Glick

Immunocompromised individuals present a challenge to oral health care providers. As the spectrum of patients with dysfunctional immune responses continues to broaden, practitioners should be able to identify these patients, understand the potential for complications, and manage their dental care safely and effectively. This article reviews various immune deficiencies, addresses complications that may result from an individual's immune status, and discusses dental considerations for these patients.

Dentistry and Bioterrorism 733
Salvador Flores, Shannon E. Mills, and Lee Shackelford

This article briefly summarizes the historical precedents for the use of biological weapons in war, describes the agents currently believed to pose the most likely threat for use as terror weapons, and discusses the role that dentistry might play in any future intentional use of biological agents.

Legal Issues for Healthcare Workers with Bloodborne Infectious Disease 745
Helene S. Bednarsh and Bennett Klein

The risk of bloodborne disease transmission in dental settings is very low. Available data support the low risk of transmission. The rate of occupational injuries among dental health care workers has decreased over the last decade and, other than the 1990 case of HIV transmission in a dental office, there have been no additional reports of bloodborne disease transmission by dental health care workers. However, public policy and judicial decisions focus less on science and more on emotion. Although many infection control organizations have updated their policies to remain current with science, the United States Public Health Service policy remains as released in 1991. It would be prudent for these guidelines to be updated to reflect current scientific evidence and be inclusive for all bloodborne pathogens.

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