

Infection control in an era of emerging infectious diseases

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[PICTURE: ©MELODIA PLUS PHOTOS]

More than three decades have passed since the emergence of human immunodeficiency virus (HIV) as a global pandemic. More than any other infection, it is possible to single out HIV as the primary stimulus for changing infection control practices in dentistry. Prior to the mid-1980s, it was uncommon for dentists and allied professionals to wear gloves during routine dental procedures. Many dental clinics did not use heat sterilisation, and disinfection of surfaces was limited to a cursory wipe with an alcohol-soaked gauze sponge. This was despite our knowledge that hepatitis B virus (HBV) had been spread in clusters in the offices and clinics of infected dentists and that dentists were clearly at occupational risk for acquiring HBV.

Today, many take safe dental care for granted, but there is still reason to remain vigilant in ensuring an infection-free environment for providers and patients. HIV has fortunately proven to be easily controlled in a clinical environment using the same precautions as those effective for preventing the transmission of HBV and hepatitis C virus.¹ These standard precautions include the use of personal protective attire, such as gloves, surgical masks, gowns and protective eyewear, in combination with surface cleaning and disinfection, instrument sterilisation, hand hygiene, immunisations and other basic infection control precautions. Sporadic reports of transmission of blood-borne diseases associated with dental care continue, but are most often linked to breaches in the practice of standard precautions.²

Emerging and re-emerging infectious diseases present a real challenge to all health care providers. Three of the more than 50 emerging and re-emerging infectious diseases identified by the Centers for Disease Control and Prevention and the World Health Or-

ganization (WHO) include Ebola virus disease (EVD), pandemic influenza and severe acute respiratory syndrome.^{3,4} These previously rare or unidentified infectious diseases burst into the headlines in the past several years when they exhibited novel or uncharacteristic transmission patterns.

Concern about emerging infectious diseases arises for several reasons. When faced with a particularly deadly infectious disease such as EVD, which can be spread through contact with an ill patient's body fluids, health care workers are naturally concerned about how to protect themselves if an ill patient presents to the dental clinic. With diseases such as pandemic influenza and severe acute respiratory syndrome, which may be spread via inhalation of aerosolised respiratory fluids when a patient coughs or sneezes, the concern is whether standard precautions will be adequate.

In addition to standard precautions, treating patients with these diseases requires the use of transmission-based precautions. These encompass what are referred to as contact, droplet and airborne precautions for diseases with those specific routes of transmission. Transmission-based precautions may include patient isolation, placing a surgical mask on the patient when he or she is around other people, additional protective attire for care providers, and in some cases the use of respirators and negative air pressure in a treatment room. In most cases, patients who are contagious for infections requiring droplet or airborne precautions should not be treated in a traditional dental clinic setting.

Updating a patient's medical history at each visit will assist dental health professionals in identifying

patients who are symptomatic for infectious diseases. Patients with respiratory symptoms, including productive cough and fever, should have their dental treatment delayed until they are no longer symptomatic. Additionally, health care professionals who are symptomatic should refrain from coming to work until they have been free of fever without taking fever-reducing medication for 24 hours.

In most cases, a patient with symptoms as severe as those experienced with EVD will not present for dental care and therefore extraordinary screening and protection protocols are not recommended. If a patient is

suspected of having a highly contagious disease, he or she should be referred to a physician, hospital or public health clinic.

Dental professionals should take action to remain healthy by being vaccinated according to accepted public health guidelines, understanding that the recommendations may differ according to country of residence. Performing hand hygiene procedures at the beginning of the day, before placing and after removing gloves, changing gloves for each patient, wearing a clean mask and gown or laboratory coat, and wearing protective eyewear are all positive actions that help prevent occupational infections. In addition, cleaning and heat sterilisation of all instruments and disinfection of clinical surfaces ensure a safe environment for patients. There is solid evidence that dental care is safe for patients and providers when standard precautions are followed, but patients and dental health care workers are placed at risk when precautions are compromised and breaches occur.

Editorial note: A list of references is available from the publisher.

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(PICTURE: GETTY IMAGES)

Kurz & bündig

Seit dem Auftreten des HI-Virus vor dreißig Jahren haben sich Maßnahmen zur Infektionskontrolle in Zahnarztpraxen stark verändert. War es davor i. d. R. unüblich, bei zahnärztlichen Routineprozeduren Handschuhe zu tragen oder eine Hitzesterilisation durchzuführen, so werden heutzutage solch einfache Hygienevorkehrungen vorausgesetzt. Mittlerweile lässt sich HIV mit den Standardvorsichtsmaßnahmen in der Klinik und Praxis gut kontrollieren. Eine Herausforderung stellen dagegen neu auftauchende und wieder auftauchende Infektionskrankheiten dar, wie das Ebola-Virus (EVD), Grippepandemien und das Schwere Akute Respiratorische Syndrom (SARS). Standardmaßnahmen sind dabei oftmals nicht ausreichend.

Zusätzliche Vorkehrungen hier betreffen Maßnahmen, die eine Übertragung der Erreger durch Kontakt, Tröpfchen oder über die Luft verhindern. Dies sind Patientenisolation, Aufsetzen einer chirurgischen Maske beim Patient bei Kontakt mit anderen Menschen, zusätzliche schützende Kleidung beim Behandlungspersonal und in manchen Fällen die Verwendung von Atemschutzmasken sowie Luftunterdruck im Behandlungsraum. Patienten mit einer hochgradig ansteckenden Erkrankung wie EVD werden jedoch selten in Zahnarztpraxen vorstellig und sollten im Fall der Fälle an einen Arzt oder in ein Krankenhaus überwiesen werden.

Generell sollten Zahnärzte darauf achten, gemäß der regional akzeptierten Gesundheitsrichtlinien einen ausreichenden Impfschutz zu haben, auf eine regelmäßige Handhygiene zu achten, vor jedem neuen Patienten Handschuhe zu wechseln, eine saubere Maske und Kittel sowie einen Augenschutz zu tragen. Zusätzlich gehört die Reinigung und Hitzesterilisation aller Instrumente und das Desinfizieren der Behandlungsoberflächen zur Vorsorge. Auf diese Weise kann eine sichere Behandlungsumgebung für das Behandlungsteam sowie den Patienten sichergestellt werden.