

August 3, 2010

OSHA Docket Office  
Docket No. OSHA-2010-0003  
U.S. Department of Labor  
200 Constitution Avenue NW, Room N-2625  
Washington, DC 20210

To Whom It May Concern:

The American Dental Association (ADA) is pleased to offer the enclosed comments in response to your request for information about the impact a new comprehensive infectious diseases standard may have on dental offices. We offer these comments in response to the Federal Register notice on May 6, 2010 (75 FR 24835).

In sum, our membership surveys reveal that the dental community is largely compliant with existing CDC and OSHA standard precautions for preventing the spread of occupationally-acquired infectious diseases. The ADA has long recommended that dental professionals follow these guidelines, which address bloodborne, airborne, and contact transmissions.

There is little published evidence that infectious aerosols are generated during dental treatment or that a new infectious diseases standard would have any impact on patient or dental office worker exposure to infectious diseases. Experience also suggests that the added costs of complying with a new standard would result in higher dental fees, making dental care less affordable at a time when many Americans are already having trouble accessing our nation's health care system. For these reasons, we strongly urge you to exempt dental offices from having to comply with a yet another infection control standard.

Enclosed you will find our detailed responses to the specific questions you posed. We hope these remarks will be helpful as you move to determine what actions, if any, your agency may take to further limit the spread of occupationally-acquired infectious diseases in health care settings.

We appreciate the opportunity to comment and look forward to your favorable reply. In the meantime, please contact Mr. Robert J. Burns if you have any questions or require additional information. Bob can be reached by phone at (202) 789-5176, or via email at [burnsr@ada.org](mailto:burnsr@ada.org).

Sincerely,

/s/

Ronald L. Tankersley, D.D.S.  
President

/s/

Kathleen T. O'Loughlin, D.M.D., M.P.H.  
Executive Director

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**THE IMPACT OF A COMPREHENSIVE OSHA INFECTIOUS DISEASES  
STANDARD ON DENTAL OFFICES**

August 3, 2010

**(1) Describe the typical dental office and number(s) of employees.**

In 2007 there were 181,725 active dentists in the United States. Dental clinics typically are ambulatory, out-patient healthcare settings. Approximately 93% are private practices and have an average of 4.8 full or part-time non-dental employees. Each practice employs an average of 1.3 dental hygienists and 1.8 chair side assistants. About 8.1% of dentists are employees. The average dental clinic processes 4,096 patient visits per year.<sup>1</sup>

**(2) What infectious agents are dental office workers most frequently exposed to (and how often are they exposed)? What infection control (IC) measures can be (or are being) taken to prevent exposure?**

Dental clinic treatments, of course, are centered in the oral cavity. Dental professionals are occupationally exposed to blood, saliva and other oral fluids on a daily basis. Dental professionals may also be exposed to airborne pathogens. However, potential exposures are mostly limited to infected droplets and spatter from the use of rotary tools, which tend not to remain airborne for long periods and tend to settle out of the air quickly.<sup>2</sup>

Efficient infection transmission of aerosolized microbes from patients to dental professionals has not been demonstrated. Tuberculosis (TB), for example, has not been shown to be an occupational hazard for dental professionals, and the Centers for Disease Control and Prevention (CDC) does not recommend routine immunization of dental professionals against TB with the Bacillus Calmette-Guerin (BCG) vaccine.

Influenza transmission has not been demonstrated to occur more often in dental settings than in non-dental settings. Legionella pneumophila has been hypothesized as an occupationally acquired airborne pathogen from dental unit water, but this would not generate exposure to dental professionals, as opposed to patients. One study has demonstrated that antibodies to L. pneumophila show no greater prevalence among dentists than in the general population.<sup>3</sup>

Many published studies have claimed to show aerosolization of microbes from the oral cavity during dental treatment. However, close examination shows that these studies seem to describe spatter rather than true aerosolization. Spatter and aerosol are terms often used interchangeably. Often, time and distance of an "aerosolized" material are not adequately described. The impression is that infectious dental aerosols routinely are produced during dental treatment, when the fact is that quickly settling (and less dangerous) spatter was generated. At this time there is little published evidence that infectious aerosols are generated during dental treatment.

In general, patients seeking dental care are not more likely to be infected with a transmissible pathogen than in a hospital setting, where patients typically present with acute symptoms from an infectious

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<sup>1</sup> American Dental Association, Survey Center, "2007 Distribution of Dentists in the US by Region and State," 2008 Survey of Dental Practice.

<sup>2</sup> H. Batchu, S.E. Gruninger, G. Schumacher, F.C. Eichmiller, and P.L. Fan., "Characterization of Aerosols During Simulated Dental Procedures," *Journal of Dental Research*, 83 (Special Issue A), 2004: #2250.

<sup>3</sup> K.L. Vogt, S.E. Gruninger, P. Kang, C. Siew, and D.M. Meyer, "Occupational Exposure to Legionella Among Dentists," *Journal of Dental Research*, 84 (Special Issue A), 2005: #3477.

disease often as the primary reason for their visit. Therefore, dental professionals' exposure to pathogens from infected patients is more likely to mirror the pathogen prevalence rate in the general population of the local geographical area.

The ADA recommends that dental professionals follow the CDC *Guidelines for Infection Control in Dental Health-Care Settings*.<sup>4</sup> These recommendations address bloodborne, as well as airborne and contact transmissions. The ADA further recommends that dental professionals follow CDC *Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings*.<sup>5</sup>

Data from the 2009 ADA Health Screening Program for dental professionals showed high compliance with the use of standard precautions (see Table 1).

Approximately, one-third of dental professionals use N95 masks (as opposed to the very high use of facemasks). This level of usage is indicative of the relatively uncommon exposure to patients presenting with symptoms consistent with possible infection with TB. Some of the reason for this level of usage likely relates to the perceived level of exposure to influenza. Although data are not presented, it may be that usage is increased during the annual flu season.

Dental professionals routinely use saliva ejectors and high-volume evacuation to further reduce the potential for airborne infectious agents.

Evidence for the effectiveness of standard precaution use among dental professionals is reflected in the seroprevalence rates of Hepatitis C (HCV) and Human immunodeficiency virus (HIV) for which vaccines are not available. Dentists, dental hygienists and chair side assistants have seroprevalence rates below the general population.<sup>6,7,8</sup>

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<sup>4</sup> Centers for Disease Control and Prevention. [Guidelines for Infection Control in Dental Health-Care Settings, 2003](#). *MMWR* 2003; 52(No. RR-17).

<sup>5</sup> Centers for Disease Control and Prevention. [Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005](#). *MMWR* 2005; 54(No. RR-17).

<sup>6</sup> S.E. Gruninger, P. Kang, K.L. Vogt, C. Siew, and D. Meyer, "Hepatitis C Infection among U.S. Dentists, 2000-05" *Journal of Dental Research*, 86 (Special Issue): #2877, 2007.

<sup>7</sup> Thomas, D.L.; Gruninger, S.E.; Siew, C.; Joy, E.D.; and Quinn, T.C., "Occupational Risk for Hepatitis C Infections Among General Dentists and Oral Surgeons in North America." *American Journal of Medicine*, 100(1), 1996: 41-45.

<sup>8</sup> Gruninger, S.E.; Siew, C.; Chang, S.-B.; Clayton, R; Leete, J.K.; Hojvat, S.A.; Verrusio, A.C.; and Neidle, E.A., "Human Immunodeficiency Virus Type I Infection among Dentists." *Journal of the American Dental Association*, 123(3), 1992: 57-64.

**Table 1. Percent of Time Personal Barrier Techniques are Used**

	<b>Always</b>	<b>Sometimes</b>	<b>Never</b>	<b>N</b>
<b>Examination Gloves</b>				
Dentists	98.8	1.0	0.3	736
Dental Hygienists	100	0	0	104
Chair side Assistants	98.8	0	1.2	84
<b>Eyewear</b>				
Dentists	92.9	6.5	0.5	735
Dental Hygienists	97.1	1.9	1	104
Chair side Assistants	89.3	8.3	2.4	84
<b>Face Masks when Using Rotary Tools</b>				
Dentists	87.1	11.4	1.5	734
Dental Hygienists	97.1	1	1.9	103
Chair side Assistants	89.4	5.9	4.7	85
<b>Face Shields</b>				
Dentists	19.3	20.3	60.5	696
Dental Hygienists	39.6	16.8	43.6	101
Chair side Assistants	32.1	13.6	54.3	81
<b>Gowns / Scrubs / Lab Coats</b>				
Dentists	79.4	12.8	7.8	728
Dental Hygienists	93.3	5.8	1	104
Chair side Assistants	87.8	7.3	4.9	82
<b>Surgical Gloves</b>				
Dentists	26.3	41.2	32.5	718
Dental Hygienists	16.2	21.2	62.6	99
Chair side Assistants	37	24.7	38.3	81
<b>Eyewear with Solid Sideshields</b>				
Dentists	45.2	23.4	31.4	719
Dental Hygienists	52.9	19.6	27.5	102
Chair side Assistants	46.3	18.8	35	80
<b>Disposable N95 Masks</b>				
Dentists	15.9	17.6	66.5	698
Dental Hygienists	22.1	15.8	62.1	95
Chair side Assistants	40	6.3	53.8	80

Source: American Dental Association, Survey Center, 2009 Health Screening Program: Dentists, Dental Hygienists, and Chair side Assistants.

**(3) What is an ideal method for determining who is at risk of potential exposure to contact, droplet, and airborne transmissible diseases in the dental office? Is this method being employed now? If so, what are the results? Specifically:**

- **On average, how many total workers have a risk of exposure?**
- **What proportion of dental office staff does this represent?**
- **What are the job duties of these workers?**
- **To which diseases are they exposed?**

Per our response to question 1, an average of 3.1 dental healthcare workers per dentist has some occupational exposure risks to infectious pathogens. This represents 39.2 percent of the staff of the typical dental practice. These workers predominately represent dental hygienists and chair side assistants with a very small fraction of dentist employees. All of these employees have about the same risk of exposure to the same infectious agents as the employer dentist. As indicated in our response to question 2, administrative staff have little to no exposure to airborne pathogens and have no contact with patient blood or oral fluids.

Please see preceding answer for data on actual exposure.

**(4) Regardless of actual exposure rates, what infectious agents have dental offices most frequently encountered over the last 10 years (and how often)?**

The most common occupational bloodborne pathogens for dentistry are the Hepatitis B (HBV) and HCV viruses. HIV is rarely encountered and difficult to transmit occupationally. Seasonal influenza viruses are ubiquitous, as well as rhinoviruses of the common cold. TB is rarely encountered, unless the dental clinic is located in an endemic area. Exposure mirrors the infection prevalence level in the local general population.<sup>9,10,11</sup>

**(5) Please identify any data and/or information sources that can help OSHA characterize workers' occupational exposure to contact, droplet, and airborne transmissible infectious diseases (e.g., databases, peer-reviewed studies, etc.).**

The ADA has published the results of many studies on occupational infectious hazards conducted on dental professionals through its annual Health Screening Program (see response to item 2). The Harvard Health Professionals Follow-Up Study (HPFS) is another source of data on health professionals.

**(6) Please identify any case studies that highlight the extent to which employers are fully implementing and consistently following their written infection control programs. Please also identify any studies that demonstrate the difference in infection rates between where the infection control program had lapsed and where rigorous implementation of control measures was instituted.**

Since the widespread implementation of standard precautions about 20 years ago, there have been no significant workplace instances of infection outbreaks related to the practice of dentistry that required

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<sup>9</sup> S.E. Gruninger, P. Kang, K.L. Vogt, C. Siew, and D. Meyer, "Hepatitis C Infection among U.S. Dentists, 2000-05," *Journal of Dental Research*, 86 (Special Issue): #2877, 2007.

<sup>10</sup> Thomas, D.L.; Gruninger, S.E.; Siew, C.; Joy, E.D.; and Quinn, T.C., "Occupational Risk for Hepatitis C Infections Among General Dentists and Oral Surgeons in North America." *American Journal of Medicine*, 100(1), 1996: 41-45.

<sup>11</sup> Gruninger, S.E.; Siew, C.; Chang, S.-B.; Clayton, R.; Leete, J.K.; Hojvat, S.A.; Verrusio, A.C.; and Neidle, E.A., "Human Immunodeficiency Virus Type I Infection among Dentists," *Journal of the American Dental Association*, 123(3), 1992: 57-64.

more rigorous implementation of IC procedures. One instance of patient to patient transmission of HBV was reported a few years ago, but the cause of the transmission was not determined.<sup>12</sup>

In the 1980s several cluster cases of HBV transmission from dentist to patient were reported, but, again, with the widespread use of standard precautions, no cluster cases have since been reported.<sup>13</sup> The mysterious transmission of HIV from a dentist to several patients was reported in 1990, but a definitive cause of the transmission was never learned.<sup>14</sup> These remain isolated cases that were not repeated, which attests to current efficacy of current infection control procedures. Transmissions of TB, severe acute respiratory syndrome (SARS) or legionella in a dental setting have not been documented, and transmissions of influenza or cold viruses are nearly impossible to identify as occupational.

**(7) What are your thoughts about the adequacy of existing OSHA guidelines to protect workers against exposure to infectious agents?**

Dentistry is a profession that takes great pride in its willingness and ability to self-regulate. Yet the practice of dentistry is also highly regulated.

Traditionally, the regulation of health care has been a state responsibility and state law typically places this responsibility with state dental boards, which often look to the Centers for Disease Control and Prevention (CDC) for guidance.

At least 35 state dental boards or state dental practice acts require compliance with CDC infection control guidelines. Many others simply restate those guidelines, or something similar, as their own substantive requirements. A number of OSHA standards also address dentistry, in particular the requirements for personal protective equipment (PPE) and the bloodborne pathogen standard.

It is the view of the American Dental Association that this combination of federal and state government guidance and regulation, along with the profession's self-regulation, provides an excellent protective web against the transmission of airborne infectious diseases. The ADA is concerned that additional OSHA action in this regard will create redundant and, perhaps, conflicting regulation, which will only create confusion, to the detriment of worker safety.

**(8) Should OSHA's deliberations focus on droplet and airborne exposures only, or should contact exposures also be included?**

Disinfection of environmental surfaces is recommended by the 2003 CDC IC recommendations and is part of standard precautions. Although available information shows very high compliance by dental professionals with standard precautions, the CDC IC guidelines for dental settings state that:

*"In the dental operatory, environmental surfaces (i.e., a surface or equipment that does not contact patients directly) can become contaminated during patient care. Certain surfaces, especially ones touched frequently (e.g., light handles, unit switches, and drawer knobs) can serve as reservoirs of microbial contamination, although they have not been associated directly with transmission of infection to either DHCP or patients."<sup>15</sup>*

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<sup>12</sup> Centers for Disease Control and Prevention, *Hepatitis B Virus Transmission in a Dental Office*, [www.cdc.gov/oralhealth/infectioncontrol/hepB.htm](http://www.cdc.gov/oralhealth/infectioncontrol/hepB.htm).

<sup>13</sup> Centers for Disease Control and Prevention, *Epidemiologic Notes and Reports Outbreak of Hepatitis B Associated with an Oral Surgeon—New Hampshire*, *MMWR* 36(9): 132-3, 1987.

<sup>14</sup> Centers for Disease Control and Prevention, *Possible Transmission of Human Immunodeficiency Virus to a Patient during an Invasive Dental Procedure*, *MMWR* 39(29): 489-493, 1990.

<sup>15</sup> Centers for Disease Control and Prevention. *Guidelines for Infection Control in Dental Health-Care Settings, 2003*. *MMWR* 2003; 52(No. RR-17).

Therefore, infection transmission via transfer from an environmental surface is remote at worst. Furthermore, very high usage of disposable examination gloves that are changed between each patient along with hand hygiene procedures that are part of standard precautions have kept contact transmissions in dental settings to a minimum.

Current CDC IC recommendations for dental settings, which cover contact and airborne transmission modes, are effective in minimizing infection transmissions. Dental professional compliance with these recommendations is high, and the lack of evidence of specific occupational pathogen transmissions does not support further regulation of contact, droplet and airborne IC procedures.

**(9) What public sector health care workers are at higher than average risk for exposure to infectious agents (e.g., public hospitals, health clinics, etc.)? What conditions are unique to these occupations (that are not seen in the private sector)?**

The ADA is not aware of any data to demonstrate that public health dental professionals are occupationally exposed at any rate different from those in private practice. As mentioned our the response to item 2, however, patients in a hospital setting are more likely to be infected with a pathogen in contrast to presenting at a private dental practice. For example patients infected with TB and requiring dental treatment routinely are directed to a dental clinic within a hospital setting.

With properly implemented TB infection control procedures in a hospital, the incidence of dentist occupationally acquired TB should not be significantly higher than for dentists in private dental facilities.

**(10) If dental offices are subject to JCAHO or CMS requirements or otherwise have an infection control program, please provide information on the elements of the program. If dental offices are not subject to these requirements and do not have an infection control program, how do they prevent exposure to contact, droplet, and airborne transmissible diseases?**

Dental practices are not subject to JCAHO requirements and the ADA is unaware of any CMS requirement for dental offices to have an infection control program, even if they are Medicaid providers.

Traditionally, the regulation of health care is a state responsibility and state law typically rests this responsibility with state dental boards, which often look to the Centers for Disease Control and Prevention (CDC) for guidance.

At least 35 state dental boards or state dental practice acts require compliance with CDC infection control guidelines. Many others simply restate those guidelines, or something similar, as their own substantive requirements. A number of OSHA standards also address dentistry, in particular the requirements for personal protective equipment and the bloodborne pathogen standard.

The ADA has adopted policy recognizing the value of the CDC infection control guidelines and calls on all dentists to comply with it.

**(11) Who typically manages the infection control program in most dental offices? What percentage of the individual's time is spent administering the program?**

Because of the small size of the typical dental office, there is no single model for how infection control programs are managed. The person ultimately responsible is the dentist. However, day-to-day management of such programs may be shared by a hygienist, assistant or an office manager.

See the response to item 1 for data on the number of clinical employees in U.S. dental practices.



**(12) What are the typical resource requirements and associated costs of administering an infection control program in most dental offices? What amount is spent starting the program? Maintaining the program?**

For purposes of airborne infectious disease, the primary costs are those associated with PPE.

As is indicated in the survey data provided in response to question 2, use of masks and gloves is virtually universal among dental office clinical staff. Similar to the CalOSHA standard, dental offices typically employ isolation techniques for patients with apparent infectious disease.

Unlike medical clinics (especially for treatment of such diseases), dental offices will commonly send such patients home untreated with instructions to return upon recovery. While not readily quantifiable, there is a cost associated with this practice in lost or deferred revenue.

**(13) Are there any features of dental office infection control programs that present economic difficulties for the small business? If so, please describe.**

Please see the preceding response.

**(14) How do dental offices evaluate the effectiveness of their infection control programs? What methods and criteria are used? How often is the program evaluated? What results have been achieved? What problems and/or successes have been encountered?**

Please see data presented previously, particularly in response to question 2.

As small businesses, dental offices are highly sensitive to employee illness. For each staff person out of the office, the dentist and remaining staff must perform the tasks otherwise covered by the missing employee.

**(15) How do most dental offices track worker exposures to infectious diseases? What types of infectious diseases are typically encountered? What are the exposure/infection rates? Are there any trend data?**

The ADA is not aware of any responsive data, other than that previously presented.

**(16) Do dental offices have a process for early identification of patients who may have an infectious disease? If so, how is this information conveyed to dental office workers? Have these identification and communication procedures been effective? Please explain.**

Patient screening for infectious diseases is typically done at the beginning of the visit, during the updating of the patient's medical history form. In general, patients with cough or fever are discouraged from receiving treatment. If patients are identified as having such symptoms and treatment is nevertheless rendered (not the common practice), clinical staff are informed through verbal communication or chart notation.

**(17) What types of problems or obstacles do dental offices encounter when implementing specific control procedures? Please explain.**

The control procedures used in dental offices are well established and straightforward, with minimal

associated difficulty. They include immunizations (such as the H1N1 vaccine), isolation (as described in previous answer), and routine use of PPE (with a very high compliance rate).

Because these techniques are so well established, understood and accepted, there are minimal problems or obstacles incurred.

**(18) What infection control measures have been found to be ineffective or unnecessary in dental office settings? Please explain.**

The ADA supports the CDC IC guidelines. As stated previously, additional regulation in addition to CDC guidelines, existing OSHA standards and state dental board rules will likely prove to be both ineffective and counterproductive due to the risk of redundant or conflicting rules.

**(19) How many patients requiring airborne precautions has the typical dental office encountered in the last ten years? Does the typical dental office have an airborne infection isolation room? If not, how do these offices provide an alternate means of isolation? Do they isolate and transfer these patients to an outside facility? If so, please explain how.**

It is not known how many patients required airborne precautions that presented at dental clinics over the past 10 years. Patients with infectious respiratory diseases (TB, SARS, H1N1 flu) are not likely to present for dental treatment except for emergency situations. In such instances dentists should follow CDC *Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis in Health-Care Settings*<sup>16</sup>, as well as *Interim Guidance on Infection Control Measures for 2009 H1N1 Influenza in Healthcare Settings, Including Protection of Healthcare Personnel*.<sup>17</sup> It is recommended that the patient be transferred to a hospital setting, which is better equipped to safely handle these patients.

Most dental clinics do not have dedicated isolation rooms. Rather the patient is either sent home or, if necessary, is given a disposable facemask (N95) and asked to wait in an unoccupied room, while arrangements are made for transport to a hospital.

**(20) Please describe the policies and actions the typical dental office takes to foster a culture of safety. What means have been particularly effective (or ineffective)? What problems (or obstacles) have been encountered?**

Dentists are health care professionals for whom all health issues are of paramount importance. Reliance on the professionalism of dental office personnel best promotes a culture of safety. Over regulation and micromanagement damages this culture.

**(21) What has organized dentistry done to develop and/or enforce adherence to voluntary infection control measures (e.g., training initiatives, worker incentives, etc.)? What factors have been effective at fostering adherence? What factors have affected non-compliance?**

The ADA has adopted policy recognizing the value of the CDC infection control guidelines and calls on all dentists to comply with it. See previous answer for a discussion of what fosters a culture of safety and what detracts from it.

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<sup>16</sup> Centers for Disease Control and Prevention. [Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005](#). *MMWR* 2005; 54(No. RR-17).

<sup>17</sup> Centers for Disease Control and Prevention, *Interim Guidance on Infection Control Measures for 2009 H1N1 Influenza in Healthcare Settings, Including Protection of Healthcare Personnel*, [www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm).

- (22) How do dental offices determine when a facemask should be used for worker protection versus when a respirator should be used? How do dental offices determine which employees should use a facemask and which should use a respirator? Please describe the different types of respirators used (and when they are used).**

Surgical and cone type N95 masks are most often used in dentistry. Standard facemasks are used during patient treatment, which are effective in preventing transmissions from spatter, which is of primary concern in dentistry. NIOSH approved disposable N95 respirators are used when a patient is suspected to have infectious respiratory disease.

- (23) Is there a need for a more rigorous certification/approval process for facemasks and additional independent verification of the personal protective properties of these devices?**

The ADA would support uniform standards and independent certification or verification of facemasks.

- (24) What are dental offices doing to educate workers with medical conditions (and/or treatments) that may impair the worker's ability to resist infections? What approaches are being used or should be used to address the special needs of workers with these conditions?**

The majority of dental practices follows and educates staff on the CDC recommendations that each dental office should have a written plan for an infection control program, which includes elements to protect personnel. One of these elements includes medical condition management and work-related illness and restrictions.

Dental practice staff is responsible for monitoring their own health status and staff members who have acute or chronic medical conditions that render them susceptible to opportunistic infection should discuss with their personal physicians or other qualified authority whether the condition might affect their ability to safely perform their duties. However, under certain circumstances, health-care facility managers might need to exclude dental practice staff from work or patient contact to prevent further transmission of infection.

Decisions concerning work restrictions are based on the mode of transmission and the period of infectivity of the disease. Exclusion policies should:

- (1) be written;
- (2) include a statement of authority that defines who can exclude a member of the dental practice staff (e.g., personal physicians); and
- (3) be clearly communicated through education and training.

Policies should also encourage dental practice staff to report illnesses or exposures without jeopardizing wages, benefits, or job status.<sup>18</sup>

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<sup>18</sup> Centers for Disease Control and Prevention. [Guidelines for Infection Control in Dental Health-Care Settings, 2003](#). *MMWR* 2003; 52(No. RR-17).

- (25) What vaccines, other than hepatitis B, are necessary to protect dental office workers from exposure to infectious agents? Who should receive these vaccinations and why? Do dental offices offer these vaccines to workers? How is it determined who should be offered these vaccines?**

The ADA supports immunization recommendations set forth in Appendix B of the CDC IC guidelines.<sup>19</sup> This list is reasonably comprehensive to protect dental healthcare workers from infectious pathogens likely to be encountered occupationally. All dental professionals treating patients, in close proximity to patients being treated (within one meter) or likely to come in contact with patient material that may be infectious should receive these immunizations. No additional immunizations are recommended at this time.

- (26) Do most dental offices keep records of each employee's vaccination status? If not, what administrative or recordkeeping procedures are (or should be) used?**

Most dental offices follow the CDC *Guidelines for Infection Control in Dental Health-Care Settings*, which suggests that the health status of the dental health care provider be monitored by maintaining records of work-related medical evaluations, screening tests, immunizations, exposures, and post-exposure management.<sup>20</sup> Such records must be kept in accordance with all applicable state and federal laws, including the Privacy Rule of the Health Insurance Portability and Accountability Act (HIPAA) and OSHA's Occupational Exposure to Bloodborne Pathogens Standard.<sup>21,22</sup>

- (27) What post-exposure prophylaxis evaluation practices (PEP) are used in most dental offices? For what infectious agent exposures should workers be provided with PEP and/or evaluation? Please describe the disease, its associated PEP, and the PEP efficacy.**

When staff members are exposed to an infectious disease (respiratory infections or gastrointestinal illnesses) they are referred to their primary care physician for evaluation and determination of whether post-exposure prophylaxis is needed. For example, vitals were monitored for staff exposed to the H1N1 flu. At times these staff members were given antiviral medications for influenza from their primary care physician. Dental practices will often have exposed staff monitor vitals (e.g., temperature, pulse, etc).

- (28) What do dentists do with workers who decline the recommended vaccinations? How do they ensure workers have access to the necessary post-exposure prophylaxis evaluation practices (PEPs)?**

Most, if not all dentists require that employees who decline to accept hepatitis B vaccination sign an appropriate declination statement. Oral health professionals who are unable or unwilling to be vaccinated as required or recommended are (or should be) educated regarding their exposure risks, infection-control policies and procedures for the facility, and the management of work-related illness and work restrictions (if appropriate) for an exposed or infected dental staff member.

The majority of dentists implement a combination of standard precautions, engineering, work practice, and administrative controls to minimize occupational exposures. Written policies and procedures to

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<sup>19</sup> Centers for Disease Control and Prevention. [Guidelines for Infection Control in Dental Health-Care Settings, 2003. MMWR 2003; 52\(No. RR-17\).](#)

<sup>20</sup> Centers for Disease Control and Prevention. [Guidelines for Infection Control in Dental Health-Care Settings, 2003. MMWR 2003; 52\(No. RR-17\).](#)

<sup>21</sup> "Standards for Privacy of Individually Identifiable Health Information." Code of Federal Regulations Title 45, Parts 160 and 164, 2009.

<sup>22</sup> "Occupational Exposure to Bloodborne Pathogens." Code of Federal Regulations Title 29, Part 1910, 2009.

facilitate prompt reporting, evaluation, counseling, treatment, and medical follow-up of all occupational exposures should be available to all dental health care providers. Written policies and procedures should be consistent with federal, state, and local requirements addressing education and training, post-exposure management, and exposure reporting.<sup>23</sup>

**(29) With respect to dental offices, what is the prevalence, content, and efficacy of personnel health service programs for infection control that include: pre-placement evaluations, evaluation and treatment of exposure-related illnesses, and work restriction or work-exclusion policies for exposed workers?**

Most dental practices do not have a monitoring system in place to measure exposure-related illnesses. Dental practices rely on general practitioners and federal, state and local public health agencies to determine if staff should be excluded from work due to exposure to an infectious disease.

**(30) How do dental offices ensure that workers are adequately trained in the use of infection control measures? How do dental offices determine whether a worker has been adequately trained? Are some training components more effective than others? Please explain.**

Dental offices typically employ on-site and online training to educate office staff about the principles and fundamentals of infection control, actual clinical procedures, and the difference between sterilization and disinfection. The training modules typically include a comprehensive review of the CDC's IC guidelines.<sup>24</sup>

Dental practices also provide training books on infection control in the dental practice and use sterility control tests to confirm dental staff members are following infection control procedures.

**(31) What information should be included in initial infection control training? What is the best format for providing initial training? What about refresher training?**

Based on data previously discussed, existing training appears to be effective. In general, IC training should include information about:

- why infection control is so important;
- the modes of transmission of infectious diseases;
- the chain of infection;
- the elements of standard precautions (e.g., hand washing, PPE, patient care equipment, environmental surfaces and injury prevention, etc.);
- exposure prevention strategies;
- post-exposure management;
- hand hygiene; and
- sterilization and disinfection of patient care items.

The best format for training would be through online training (e.g., the CDC Web site).

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<sup>23</sup> Centers for Disease Control and Prevention. [Guidelines for Infection Control in Dental Health-Care Settings, 2003.](#) *MMWR* 2003; 52(No. RR-17).

<sup>24</sup> Centers for Disease Control and Prevention. [Guidelines for Infection Control in Dental Health-Care Settings, 2003.](#) *MMWR* 2003; 52(No. RR-17).

- (32) Please describe the worker health surveillance system(s) that most dental offices use. Are exposures to infectious agents tracked? How do dental offices determine that an infectious disease has been occupationally acquired? What factors affect the successful implementation of such surveillance systems?**

Dental offices are exempt from maintaining the OSHA 100 log. As noted previously, dental offices are small businesses and any illness is immediately known. As for profession-wide tracking, see data previously discussed.

- (33) As OSHA more broadly considers the issue of occupational exposure to infectious agents, what are the implications, if any, for the Agency's existing recording and reporting requirements under OSHA's Recording and Reporting Occupational Injuries and Illness requirements ([29 CFR § 1904](#))?**

The intent of this question is not clear. One negative impact on recordkeeping requirements would be to make them more onerous.

- (34) What are the potential economic impacts associated with the promulgation of a standard specific to the hazards of infectious diseases? Are there economic benefits associated with the reduction of incidents and illnesses? Are there effects on revenue and profit?**

As small businesses, dental offices could be substantially affected by a new, comprehensive OSHA infectious diseases standard. To demonstrate, we are pleased to share the results of a 1994 survey on OSHA regulations, infection control and their effects on dental practice. The survey – commissioned by the American Dental Association and administered by the Texas-based firm RRC, Inc. – revealed a significant difference between OSHA's estimated per-practice compliance costs and those reported by dentists.<sup>25,26</sup>

OSHA estimated the annual cost of complying with its 1991 bloodborne pathogens standard would be \$872.77 per dental practice.<sup>27</sup> The ADA survey revealed an annual infection control expense of \$45,718 per practice, of which \$27,713 was attributed to compliance with OSHA rules and regulations. This means that OSHA regulations comprised more than half the total cost of infection control in the dental offices reporting.

Nearly all dental practices (94 percent) reported having to spend extra time to comply with OSHA standards. More than half (56 percent) reported increased work hours for existing staff and a third (31 percent) reported hiring additional staff to meet OSHA requirements.

Supplies, housekeeping and hand piece sterilization were highest among the cost categories reported, with annual expenses in each category exceeding \$4,000 per practice. Other high cost factors include operatory cleanup, training and instructional materials. These costs are even higher for educational institutions because they have novice learners and multiple evaluation mileposts. Instead of one set of infection control materials per patient visit, it can be many more than that due multiple learners and multiple checks per patient visit.

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<sup>25</sup> "What is the cost of compliance," *J Am Dent Assoc* 125(6), June 1994: 682.

<sup>26</sup> Study by RRC, Inc., "Analysis of Infection Control and OSHA Compliance Costs," commissioned by the American Dental Association, 1994 (*Suppl.* 1994:292-296).

<sup>27</sup> "Occupational Exposure to Bloodborne Pathogens, Final Rule," *Federal Register* 56:235 (December 6, 1991) p. 64174-64182.

Applying these individual practice costs to an estimated 114,695 dental practices, the national annual OSHA compliance cost would exceed \$2.7 billion, with the total cost of infection control at about \$5.4 billion annually.

The estimated \$2.7 billion in compliance costs contrasts sharply with OSHA's \$87.4 million<sup>28</sup> estimated compliance cost for dentists—roughly a 3,000 percent difference.

To offset these costs, 79 percent of the offices surveyed reported increasing all or some of their fees. Moreover, some dental practices cited the increased cost of OSHA compliance as the basis for withdrawing from contractual relationships with various types of dental plans. Fourteen percent of dental practices reported terminating participation with commercial insurance carrier capitation plans due to the cost of OSHA regulations. Seventeen percent reported that they terminated relations with state Medicaid programs; 5 percent terminated relations with buyers' clubs; and 5 percent terminated relations with other types of payers.

This information is provided not because it will necessarily mirror precisely costs associated with OSHA's current focus but to demonstrate that past OSHA cost estimates significantly undercounted costs.

**(35) Would market conditions be reasonably changed following the issuance of a comprehensive infectious diseases standard? If so, what changes in market structure or concentration might occur?**

As stated in our response to question 34, the issuance of a new comprehensive infectious diseases standard could force an increase in dental fees and a decrease in dental coverage at a time when many Americans still have trouble accessing our nation's health care system.

**(36) What are the potential benefits of more widespread compliance with infection control guidelines? How can OSHA best ensure such compliance takes place?**

Widespread compliance with infection control guidelines are already here in dentistry. No further OSHA action is required. In fact, additional regulation on this issue would risk damaging the gains already made through redundant or conflicting rules.

**(37) How many, and what type of small firms or other small entities, have infectious disease hazards? What percentage of their industry ([NAICS code](#)) do these entities comprise? Please specify the types of infectious diseases encountered.**

Virtually all dental practices are small firms or entities and each of the preceding responses apply.

**(38) How and to what extent would dental offices be affected by a potential comprehensive OSHA infectious diseases standard regulating occupational exposure to infectious agents? Do special circumstances exist that make controlling infectious diseases more difficult for small entities than for large entities? Describe these circumstances.**

Please see our responses to items 2 and 19.

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<sup>28</sup> "Occupational Exposure to Bloodborne Pathogens, Final Rule," Federal Register 56:235 (December 6, 1991) p. 64174-64182.