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GUEST EDITORIAL

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Emerging and re-emerging infectious diseases

Be prepared

Each time a new infectious agent or variant emerges, the public and health care providers struggle to understand how to stay safe. In the case of health care providers, we have the added responsibility for the safety of our patients, staff members and families.

In the past 30 years, we have responded to a litany of diseases and organisms with exotic names, such as hepatitis B virus (HBV); human immunodeficiency virus (HIV); hantavirus; Lyme disease; variant Creutzfeldt-Jakob disease and prion diseases; severe acute respiratory syndrome/coronavirus; avian influenza (bird flu); West Nile virus; human papilloma virus; *Escherichia coli* O157:H7; methicillin-resistant *Staphylococcus aureus*; and, of most recent concern, 2009 H1N1 influenza. There also are potential threats from deliberate exposures with uncommonly seen yet virulent agents such as anthrax, plague, tularemia and viral hemorrhagic fevers. In these circumstances, it is almost impossible for a clinician to stay fully informed about the variety of signs, symptoms, routes of transmission, virulence and other important factors related to risk of transmission.

When considering how to apply infection control practices to emerging infectious diseases, it might be best to consider the Boy/Girl Scout motto: “Be prepared.” “Be prepared for what?” someone once asked Robert Baden-Powell, the founder of Scouting. “Why, for any old thing,” he replied. The most important thing we, as clinicians, can do is to be informed and prepared—for any old or new thing that comes our way.

Preparation would be a daunting task if each agent required a special set of infection control practices, particularly when infected patients can be asymptomatic or unaware they are infected. Fortunately, dental health care workers follow a set of standard infection control precautions. In 1985, the Centers for Disease Control and Prevention (CDC), Atlanta, established “Universal Precautions,” a set of infection control practices based on the concept that all blood and bodily fluids that might be contaminated with blood

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should be treated as infectious. These were designed to prevent transmission of HIV, HBV and other bloodborne pathogens in all health care settings. In 1996, CDC expanded this guidance into “Standard Precautions,” a standard of care designed to protect health care personnel and patients from pathogens that can be spread by blood or any other bodily fluid, excretion or secretion. Standard Precautions are the foundation of a comprehensive infection control program and include a group of infection control practices that apply to all patients, regardless of suspected or confirmed infection status, in any setting in which health care is delivered, including dental settings.

At press time, we are in the middle of the 2009 H1N1 influenza pandemic. Exposure to 2009 H1N1 influenza virus occurs in household, community and occupational settings, and transmission is thought to occur through droplet exposure of mucosal surfaces; through indirect contact, usually via the hands, with respiratory secretions from an infectious patient or contaminated surface; and through inhalation of small-particle aerosols in the vicinity of the infectious person. In theory, any measure that limits the dispersal of respiratory droplets should reduce the opportunity for transmission. An important element added to Standard Precautions in 2007 was respiratory hygiene/cough etiquette.¹ Basic principles of this etiquette include the following:

- Educate staff members, patients and visitors regarding the importance of containing respiratory secretions to help prevent the transmission of influenza and other respiratory

viruses.

- Post signs in languages appropriate to your patient population with instructions to patients and accompanying family members or friends to report immediately symptoms of a respiratory infection as directed.
- Apply source-control measures such as covering the mouth and nose with a tissue when coughing and disposing of used tissues. Use a mask on a coughing person when it can be tolerated and is appropriate.
- Conduct hand hygiene after every contact with respiratory secretions.

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- Use spatial separation, ideally three feet or more, of people with respiratory infections in common waiting areas when possible.

It is worth noting that the Occupational Safety and Health Administration (OSHA) recently posted regulatory controls that health care employers should be using to protect workers from exposure to the 2009 H1N1 influenza virus.² These general principles are intended to follow CDC guidance. In addition, CDC³ recently posted specific guidance for dental health care:

- Encourage all dental health care personnel to receive vaccinations for seasonal influenza and 2009 H1N1 influenza.
- Use patient-reminder calls to identify patients reporting influenzalike illness and resched-

ule nonurgent visits until after the patient is free of fever for 24 hours without the use of fever-reducing medicine.

- Identify patients with influenzalike illness at check-in; offer a face mask or tissues to symptomatic patients; follow respiratory hygiene and cough etiquette⁴ and reschedule appointments for patients needing nonurgent care; separate ill patients from others whenever possible if evaluating for urgent care.

- Urgent dental treatment can be performed without the use of an airborne infection isolation room because transmission of 2009 H1N1 influenza is thought not to occur across longer distances through the air, such as from one patient room to another.

- Use a treatment room with a closed door, if available. If not, use one that is farthest from other patients and personnel.

- Wear recommended personal protective equipment before entering the treatment room.

- Dental health care personnel should wear a disposable N95 respirator fit-tested by the National Institute for Occupational Safety and Health when entering the operatory and when performing dental procedures in patients with suspected or confirmed 2009 H1N1 influenza.

- If N95 respirators and/or fit testing is not available despite reasonable attempts to obtain them, non-fit-tested disposable N95 respirators or surgical face masks can be considered as a lower level of protection for personnel at lower risk of exposure or lower risk of experiencing complications resulting from influenza until fit-tested N95 respirators are available.

- Minimize spray and spatter

when possible (for example, use a dental dam and a high-volume evacuator).

Despite the economic and ethical pressure to keep working despite illness, dental personnel should take action to prevent the transmission of 2009 H1N1 influenza in their practices. Among these actions are the following:

- Self-assess daily for symptoms of febrile respiratory illness (fever plus one or more of the following: nasal congestion/runny nose, sore throat or cough).
- Do not report to work with fever and respiratory symptoms.
- Remain at home until at least 24 hours after being free of fever (100°F/37.8°C), or signs of fever without the use of fever-reducing medications.
- If a family member is diagnosed with 2009 H1N1 influenza, you still can go to work but should monitor yourself for symptoms.

All aspects of preparedness planning for pandemic influenza must allow for flexibility and real-time decision making that take new information into account as the situation unfolds. CDC provides updated infection control guidance as necessary. The most important part of being prepared is to have a written plan and to train staff members in executing the plan. Excellent sources of information exist to help in developing an influenza plan, including a CDC checklist and action steps for 2009 H1N1 influenza planning and response for outpatient facilities.⁴⁻⁷

When considering infection

control guidelines and infectious disease transmission in caring for our patients, we also might do well to remember another Scout guideline—"Leave no trace" (after camping or other outdoor activities)—or, in our own Hippocratic terms, "First, do no harm." ■

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