investigations, there is evidence of transmission of pathogens during dental procedures, including hepatitis B virus (HBV),[2,3] tuberculosis,[4] herpes,[5] and HIV.[6] Since Universal Precautions were introduced in 1987, there have been no reports of transmission of HBV from a dentist to patients, probably as a result of increased use of gloves and more careful handling of sharps. However, we cannot be certain that transmission has not occurred, for the reasons discussed above. Certainly, complacency related to transmission of HBV or other pathogens in the dental office would be ill-advised.

Second, studies of risk factors associated with transmission of pathogens are limited by the difficulty of identifying cases of transmission and dealing with retrospective data. This was well illustrated by the investigation of transmission of HIV from a Florida dentist to six patients.[6]

Third, there are problems inherent in studies of effectiveness of a procedure such as hand washing, as has been well described.[7] Healthcare professionals are obligated to do no harm. The ability to test the efficacy of an intervention to reduce transmission of a pathogen can be limited by ethical considerations. If we wait for definitive evidence that a specific infection control procedure is effective and economical before including it as routine practice, the risk of cross-infection will increase.

Currently, there is a considerable controversy in Canada as a result of the publication of recommendations concerning healthcare workers infected with bloodborne pathogens. The most controversial recommendation is that healthcare workers who are hepatitis B surface antigen- and hepatitis B e antigen (HBeAg)-positive should cease practice. The recommendations are based on evidence of HBV transmission from HBeAg-positive surgeons to patients despite the use of recommended infection control procedures.[8] The new recommendations include the use of look-back and trace-back investigations. Although these would provide more evidence related to transmission of bloodborne pathogens from HCWs, including dentists, there is ongoing discussion related to costs and benefits. Our data from recent studies of dentists and surgeons support other recommendations, including HBV vaccination and serological testing, appropriate follow-up after occupational injuries, more education, and monitoring of infection control practices for students and HCWs.

Our research program has evolved from primarily investigations of access to care for patients with HIV to infection control, as we have recognized the importance of compliance with recommended infection control practices not only in minimizing cross-infection but as a positive influence on access to care for patients with bloodborne pathogens. After completing provincial and national studies of dentists, we are conducting a national survey of surgeons in Canada to investigate infection control and occupational health. We are accruing evidence that is particularly relevant for the design of interventions to improve compliance with current recommendations and that will contribute to the ongoing policy debate in Canada.

Improved compliance with recommended infection control practices is not only relevant but essential in times when there is an alarming increase in drug-resistant microorganisms.

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Is Filtered or Mineral Water Good for Us and Our Patients?

To the Editor:

Many consumers try to improve the quality of tap water by using household water filters, which typically are designed to filter out some toxic chemicals such as copper or lead, but not microorganisms. Therefore, many of the filter materials used in household filters are impregnated with silver to suppress bacterial growth. We tested the microbiological quality of filtered water in a commercial water filter system (BRITA) in households and in the laboratory. In 24 of 34 BRITA filters used in households, bacterial counts increased in the filtered water up to 6,000 colony-forming units (CFU)/mL. In 4 of 6 filters tested in the laboratory, bacterial counts in the filtrate after approximately 1 week of use were higher than in tap water; in some cases, colony counts in the filtered water were 10,000 times those in tap water.[1]

The German Ministry of Health recently investigated six different household water filters sold on the German market. Up to 100 CFU/g *Aspergillus,* other fungi, or bacteria could be grown from new filter material. During 28 days of use, bacterial growth occurred in all filter materials; up to 100,000 CFU/mL could be isolated from filtered water. The most common organisms found were enterococci, *Aeromonas hydrophila, Acinetobacter* species, *Pseudomonas* species, and *Aspergillus.* Based on these results, the German State Institute for Consumer Protection and Veterinary Medicine strongly recommends not to use household water filters, or, if used, to boil the filtered water.

Is mineral water better? We investigated unopened bottles of the mineral water used in the oncology wards of the University Hospital, Freiburg, and found molds and nonfermenters in some of the bottles. We then tested 61 different so-called still waters (mineral water with low

CO^2 content) and found 13 (21%) to be contaminated with opportunistic pathogens that could cause disease in immunocompromised patients, including *Klebsiella, Pseudomonas fluorescens, Pseudomonas putida, Acinetobacter* species, and *A hydrophila.*[3] Because mineral water usually is contaminated during the production process, we subsequently chose a company that agreed to improve their production line according to our suggestions. All of our hospitalized patients now receive mineral water that is free of potential pathogens.

From our studies and those published in the literature,[4-7] it can be concluded that household water filters should not be used (if used, the filtered water must be boiled) and that mineral water, especially uncarbonated mineral water, must be tested before it is given to immunocompromised patients.

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European Glycopeptide Susceptibility Survey of Gram-Positive Bacteria

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Felmingham and colleagues from the Public Health Laboratory, Addenbrooke's Hospital, Cambridge, United Kingdom, reported a study of glycopeptide susceptibility. In the European survey, 7,078 gram-positive isolates collected in 1995 from 70 centers in 9 countries of Western Europe were examined, using a standardized, quantitative susceptibility testing method. Of the 7,078 isolates, 6,824 (96.4%) were tested by the national coordinating centers.

Teicoplanin (mode MIC 0.5 µg/mL) was generally twice as active as vancomycin (mode MIC 1 µg/mL) against *Staphylococcus aureus* (n=2,852). All isolates were susceptible to vancomycin (MIC ≤4 µg/mL) and all but four to teicoplanin (MIC ≤8 µg/mL); these four isolates were of intermediate susceptibility (MIC 16 µg/mL). With coagulase-negative staphylococci (n=1,444), the distribution of MIC of teicoplanin was wider than for vancomycin. Of coagulase-negative staphylococci other than *Staphylococcus haemolyticus,* 2.2% required 16 µg/mL teicoplanin for inhibition (intermediate) and 0.4% ≥32 µg/mL (resistant). Among isolates of *S haemolyticus,* 4.4% were of intermediate susceptibility (MIC 16 µg/mL), and 3.3% were resistant (MIC ≥32 µg/mL) to teicoplanin. However, this species represented only 6.3% of the isolates of coagulase-negative *Staphylococcus* species. Generally, teicoplanin (mode MIC ≤0.12 µg/mL) was four to eight times more active than vancomycin (mode MIC ≤0.5 µg/mL) against the 770 streptococcal isolates. Glycopeptide-susceptible *Enterococcus* species (n=1,695) were generally four times more susceptible to teicoplanin (mode MIC 0.25 µg/mL) than to vancomycin (mode MIC 1 µg/mL).

Combined vancomycin and teicoplanin (*van*A phenotype) resistance was observed more frequently (9.3%) in isolates of *Enterococcus faecium* than in *Enterococcus faecalis* (0.8%). Four isolates of unspeciated enterococci (1.4%) also expressed this resistance phenotype. Four isolates of *E faecium* and four of *E faecalis* expressed the *van*B-type (low-level, vancomycin only) resistance. Spain was the only country not to submit resistant *E faecium* strains, whereas resistant *E faecalis* isolates came only from Spain and Italy.

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