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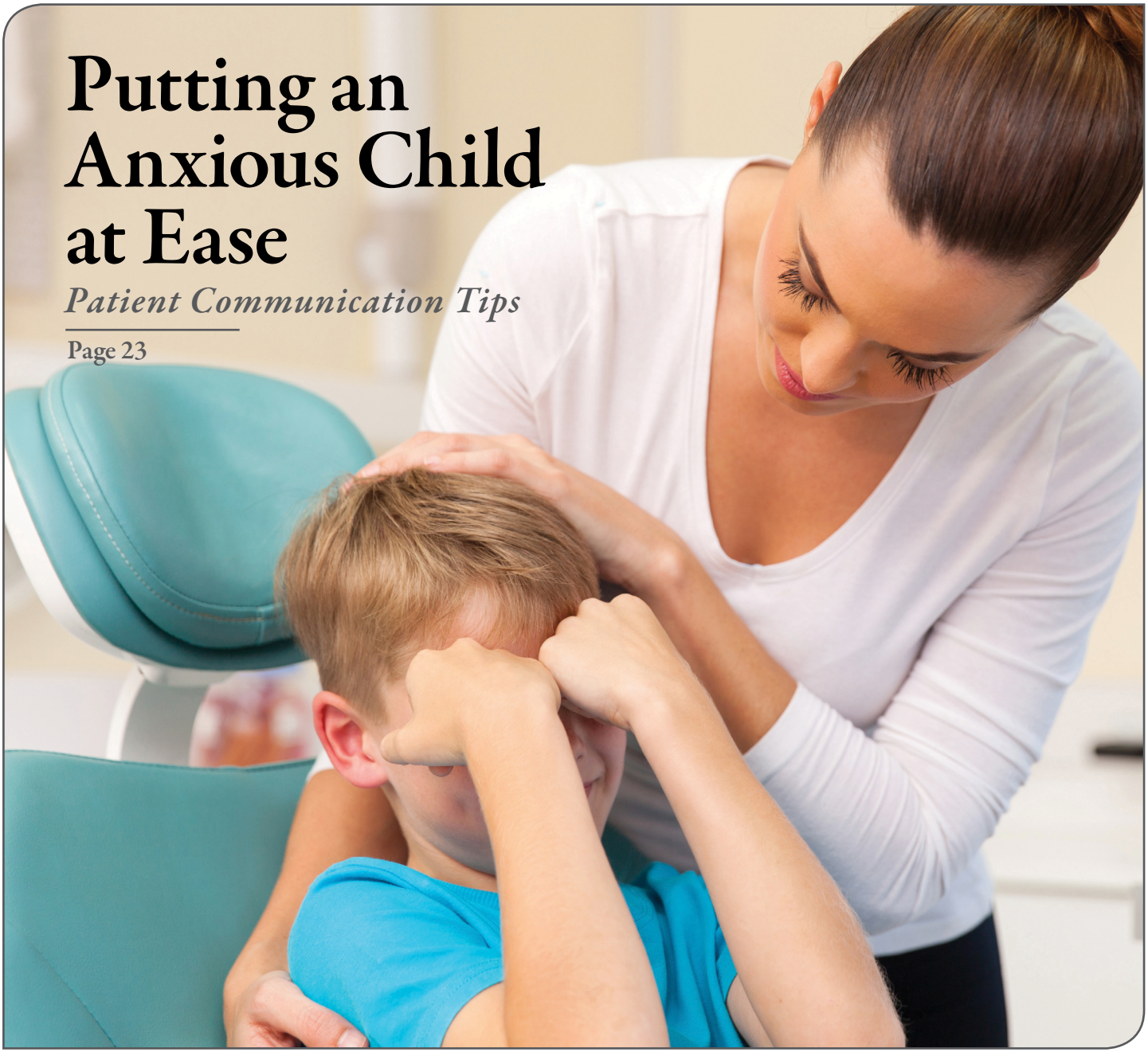
The Canadian Dental Association Magazine



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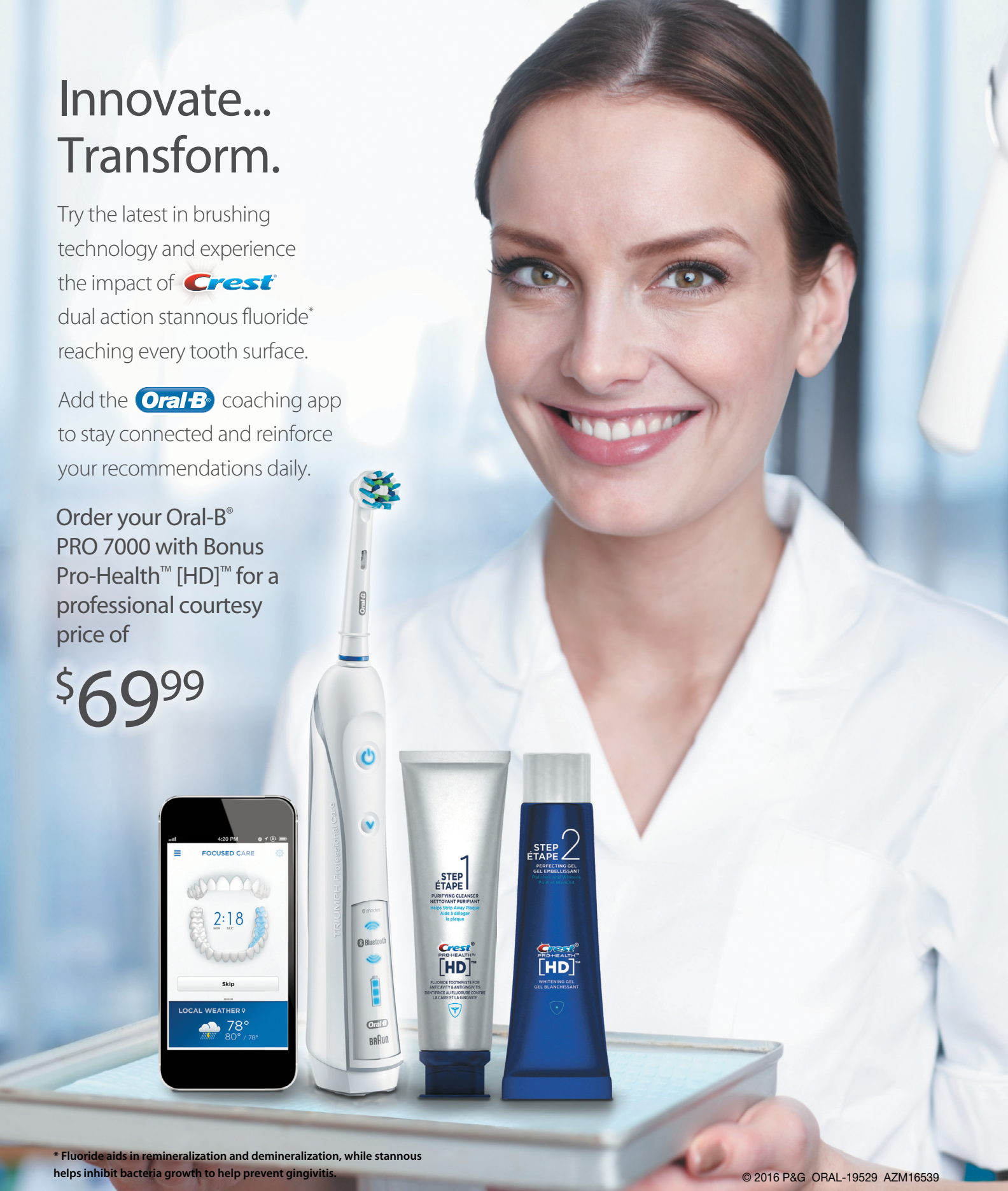

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CDA*essentials* is the official print publication of CDA, providing dialogue between the national association and the dental community. It is dedicated to keeping dentists informed about news, issues and clinically relevant information.

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Antimicrobial Resistance and Prescribing Practises

CANADIAN DENTAL ASSOCIATION

In recent years we have heard a great deal about multidrug-resistant organisms in scholarly journals as well as the popular media, but this issue is not new. The potential for antimicrobial resistance was first recognized in the 1940s after the discovery of penicillin-resistant *Staphylococci*. The problem of antimicrobial resistance has evolved, in part, because of the widespread and perhaps inappropriate use of antibiotics.

Balancing risks

In almost all instances in dentistry, the evidence supports use of antibiotics as a purely adjunctive treatment; first-line treatments should be surgical interventions, such as pulpectomy, incision and drainage, or extraction. Antibiotics should be reserved for those cases with wider or systemic involvement such as fever or cellulitis. In Canada, a few key documents provide compelling evidence on this issue. The first is an article on antimicrobial resistance and the implications for dentistry, published in *JCDA* in 1988.[1] Then in 2004, the Canadian Collaboration on Clinical Practice Guidelines in Dentistry published evidence-based guidelines that do not indicate antibiotic therapy for the two most common conditions causing dental pain: acute apical periodontitis and acute apical abscess (although antibiotic therapy may be indicated for acute apical abscess only when drainage cannot be achieved).[2]

More evidence against prophylactic antibiotic use came in 2007, when the American Heart Association published guidelines on the prevention of infective endocarditis (IE) that recommend antibiotic prophylaxis only for those conditions and procedures with the highest risk of IE.[3] The authors recognize that the bacteremias that may be implicated in IE are associated with daily activities—not from dental procedures—and observe that the cumulative exposure to bacteremia over one year as a result of daily activities is about 5.6 million times greater than that from a single tooth extraction. They also note the risks of antibiotics: nonfatal adverse reactions to antibiotics are common and fatal anaphylaxis occurs 15-25 times per million patients who receive a dose of penicillin, with 64% of deaths in patients with no history of penicillin allergy. The implication of these observations is that the risks of prophylactic antibiotics in dentistry outweigh the potential benefits in all but a few specific situations.

A perfect storm

In 2014, the British Dental Association convened an expert summit on antimicrobial resistance in dentistry and issued a consensus report.[4] The report noted that "a perfect storm had been created by the confluence of increasing loss of effective antimicrobials to resistance and stalling in the discovery of new antimicrobial agents." In the U.K., 9% of antibiotic prescriptions are written by dentists (amounting to 41.6 million prescriptions in 2013), and 70-80% of antibiotic prescriptions written by dentists do not follow recommendations of various evidence-based guidelines.

In Canada, the antibiotic prescribing behaviours of dentists—and the appropriateness of their prescriptions—are less clear. However, data from the British Columbia PharmaNet program,

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which facilitates data collection on prescribing patterns of health care professionals, highlights a disturbing trend in that province. From 1996-2013, overall use of antibiotics declined, with an 18.2% decline in physician prescribing; however, dentists increased their rate of antibiotic prescribing by 62.2% in the same time period. This means that the proportional contribution of antibiotic prescriptions by dentists rose from 6.7% to 11.3%.[5] What is not known is how many prescriptions are issued by non-dentists (e.g., primary care or ER physicians) for dental problems.

Based on anecdotal evidence and discussions with pharmacists, it is my sense that some antibiotic prescriptions are being unnecessarily issued by dentists. For example, prophylactic antibiotics are not indicated in patients who have undergone a routine extraction of impacted teeth, with an artificial joint and no comorbidity, or with dental pain prior to (or instead of) a surgical intervention.

In March 2015, CDA attended a roundtable discussion on antimicrobial resistance hosted by Health Canada, and we anticipate a continuation of these discussions in the coming year. Clearly, antibiotic stewardship is a critical issue that we must monitor and address as a profession in Canada and internationally.

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Antibiotic Prophylaxis and Infection Control

- The CDA Position Statement on Prevention of Infective Endocarditis states that "only those at greatest risk of developing infective endocarditis…should receive short-term preventive antibiotics before common, routine dental and medical procedures." Read the full CDA Position Statement at:

  cda-adc.ca/antibiotics/endocarditis

- The CDA Position Statement on Dental Patients with Total Joint Replacement states that "routine antibiotic prophylaxis is not indicated for dental patients with total joint replacements, nor for patients with orthopedic pins, plates and screws." Read the full CDA Position Statement at:

  cda-adc.ca/antibiotics/jointreplacement

- To watch an interview with Dr. David Patrick, associate professor in the University of British Columbia School of Population and Public Health, discussing his research which showed an increase in antibiotic prescribing rates by dentists in B.C., see:

  oasisdiscussions.ca/2015/03/06/app-2

> *Prophylactic antibiotics are not indicated in patients who have undergone a routine extraction of impacted teeth, with an artificial joint and no comorbidity, or with dental pain prior to (or instead of) a surgical intervention.*

Photographs: Teckles Photo Inc.

CDA MEETS WITH THE NEW MINISTER OF HEALTH

In December, CDA representatives met with the Honourable Dr. Jane Philpott, Canada's new Minister of Health, to discuss several issues affecting the oral health of Canadians and the policies that can help.

Dr. Alastair Nicoll, CDA president; Dr. Randall Croutze, CDA president-elect; and Mr. Kevin Desjardins, CDA director of public affairs, represented the Association. Joining Dr. Philpott at the meeting were Krista Outhwaite, president of the Public Health Agency of Canada (PHAC), and Kim Elmslie, assistant deputy minister of PHAC.

The meeting covered a variety of issues; key among them were improving refugee health care through the Interim Federal Health Program and ensuring better health for First Nations and Inuit. The Health Minister welcomed CDA's advice on these issues. The discussions also covered opportunities for future collaborative work on initiatives related to sugar reduction and antimicrobial resistance.

"We look forward to working with the Health Minister and PHAC in the coming year," says Dr. Nicoll. "Our work with PHAC over the past 2 years provides a solid foundation for making progress on policies and strategic initiatives for improving oral health."

❶ CDA representatives meet with the Minister of Health and representatives from Health Canada and the Public Health Agency of Canada (PHAC).

❷ (L. to r.) Dr. Randall Croutze, CDA president-elect; Dr. Alastair Nicoll, CDA president; the Honourable Dr. Jane Philpott, Minister of Health; Krista Outhwaite, president of PHAC; Kim Elmslie, assistant deputy minister of PHAC; Kevin Desjardins, CDA director of public affairs.

❸ Dr. Alastair Nicoll and the Honourable Jane Philpott, Minister of Health.

Notice of Meeting

CANADIAN DENTAL ASSOCIATION
ANNUAL GENERAL MEETING

Friday, April 15, 2016

TAKE NOTICE that the Canadian Dental Association will hold its Annual General Meeting on Friday, April 15, 2016 at the Fairmont Château Laurier Hotel, Ottawa, Ontario.

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CDSPI

CANADIAN DENTAL ASSOCIATION

Are you doing enough to PROTECT PATIENT HEALTH INFORMATION?

CDA is developing privacy principles to help dentists understand their responsibilities for protecting personal health information. Anita Fineberg, a Toronto-based lawyer and consultant specializing in health information privacy, access to information, data security and information management, was commissioned to draft the *Privacy Principles for Canadian Dentists*. We asked Ms. Fineberg to tell us about some of the key issues presented in this document.

Anita Fineberg

Q Why do dentists need these privacy principles?

Dentists, like other regulated health professionals, are required to follow confidentiality provisions in their professional codes of conduct. But these privacy principles specifically address patient privacy and security of patients' health information as required in privacy legislation, matters that all dentists in Canada need to be aware of in addition to their regulatory responsibilities.

Q Who do these principles apply to?

We decided to limit the principles to dentists in private practice. Depending on the province, the legislation that applies to health information managed by dentists who practise in a hospital, school or university may be different from that applicable to dentists in private practice. So to avoid the complexities around what rules apply to dentists in different practice contexts, we decided to limit these principles to dentists in private practice.

Q Do the principles apply to non-dentists who access patient health records, such as hygienists, office staff or IT personnel?

The way the legislation works across the country is that a health professional (a dentist in this case) is generally known as the custodian. The custodian is responsible for the way in which others in the practice, such as the receptionist and the dental hygienist, deal with health information of the dentist's patients. At the end of the day, dentists maintain legal responsibility for those individuals who require access to personal health information to provide services to patients on behalf of the dentist.

Q What types of information do the privacy principles apply to?

The principles apply to personal health information, which includes any information that can identify a specific patient: treatments provided, past health history, medication history, family history, name, address, contact information, insurance numbers, health insurance numbers—all of that together, in the dental record, can be considered patient health information.

Q Are there major differences in privacy legislation depending on the province?

Because health is a provincial responsibility, most provinces have stepped in to develop health information privacy legislation. I think it's fair to say that each provincial law is based on the same principles but there are important differences and nuances as you move across the country—the devil really is in the details.

Q Can you elaborate on that?

I'll use British Columbia and Alberta as an example of two provinces with quite different legislative structures. B.C. has a public sector law that applies to all government institutions, including all hospitals, and it has a private sector law that applies to dentists in private practice as well as any organization in the private sector, like retail stores.

In contrast, Alberta has those two pieces of legislation—one for the government sector and one for the private sector—but also has a very specific law that applies to health information in public and private sectors. Quite frankly, specific health information laws really make more sense because they specifically address the realities of a health

care system in which information moves back and forth between the public and private sectors.

Q Does it matter how a practice is set up, in terms of a dentist's obligations for protecting personal health information? For instance, does a solo practitioner have the same obligations as a dentist in a group practice?

The dentist is the custodian of the personal health information and is responsible for individuals who access patient health information. So if there is a group practice, it's important to identify who, within the group practice, is the custodian; it's critical to set out who has the ultimate responsibility for management of the information. And with that responsibility comes legal liability under the privacy laws.

Q On the topic of patient consent to disclose information, the privacy principles outline three situations when patient consent is either (1) required, (2) assumed, or (3) not required. Can you provide an example of each instance?

Generally, dentists may assume that they have their patient's consent to share health information among health professionals involved in the patient's care and treatment. For example, when a dentist in general practice needs to refer their patient to a specialist, then the patient's consent for the provision of the health information may be assumed.

But once health information is shared outside of the health context, patients need to provide express consent to their dentist, granting him or her the authority to make that disclosure. A good example is when health information is shared with insurers or benefit managers—in that case, patient consent is required.

When patient consent is not required—what we call mandatory disclosures—is a matter of provincial variation. But a good example is when the provincial law requires a dentist to provide patient health information in response to a summons or a court order. I might add that even if it appears that the disclosure is mandatory, it's a good idea for the dentist to get external legal assistance to determine the validity of the document and whether they have to comply with it to disclose the patient health information.

Q When a dentist receives a notice from an insurance company requesting more information for the purposes of an audit, should the dentist disclose that information?

I've heard from dentists that the notice might say something like, "We have obtained consent from each member authorizing the collection, use and disclosure of their personal information." Although the insurance company may have consent to collect and use patient health information, this doesn't relieve the dentist from the need to have a patient's express consent to disclose the information. Although there is a consent on the claim form or in the dentist's files, in the case of electronic CDAnet claims, these consents do not necessarily cover disclosure of additional information that may be requested, such as appointment records, medical history, etc. The best practice is to obtain written consent from the patient for any disclosures for purposes other than providing health care.

Q What are the consequences of not complying with privacy legislation?

The consequences are changing and they're becoming more serious. For the most part, if an individual is not satisfied with the way a dentist has managed their health information, they can make a complaint to the provincial privacy regulator who, in many cases, has the authority to write an order that determines the outcome of the complaint. For example, if the regulator finds that the allegations are substantiated, the order may, for example, require the dentist to stop making a disclosure, or improve his or her information security practices. None of the Canadian legislation provides privacy regulators with the ability to issue fines.

However, there may be a new requirement to provide the regulatory college with the order made against a health professional—we're seeing this now in a bill that's currently being considered by the Ontario legislature. This is certainly an important consideration because the regulatory college has the ability to restrict your practice and livelihood.

> *At the end of the day, dentists maintain legal responsibility for those individuals who require access to personal health information to provide services to patients on behalf of the dentist.*

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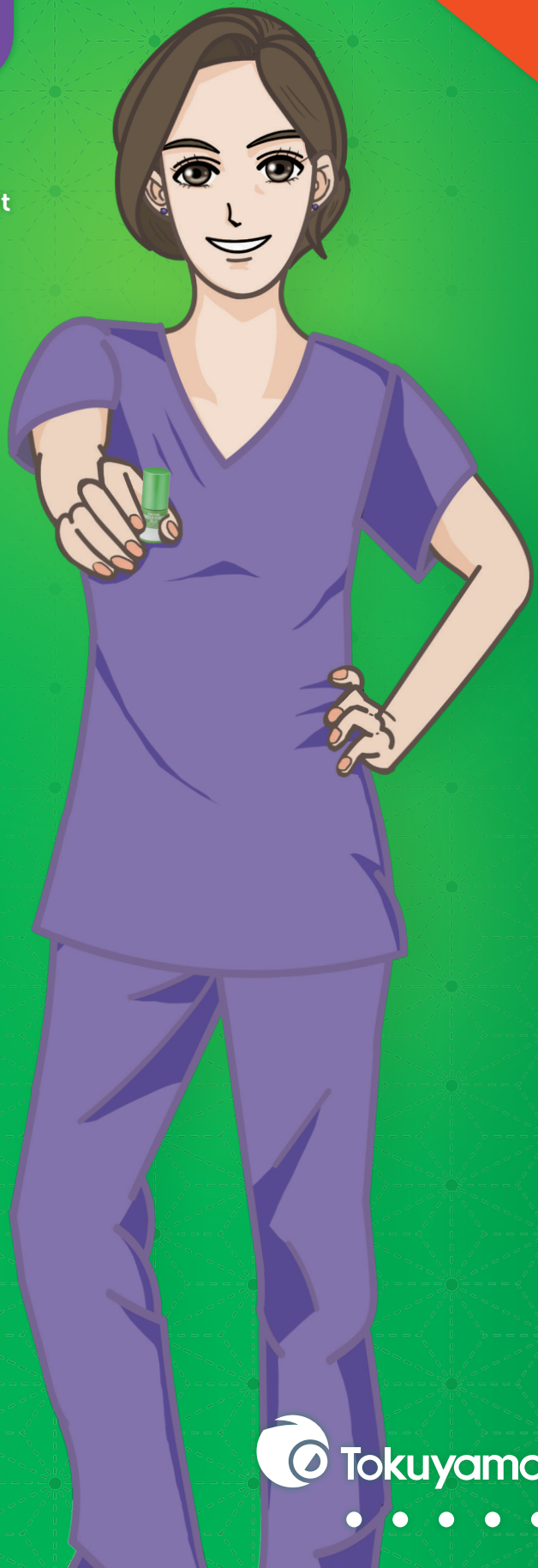

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Manitoba dentists establish foundation TO IMPROVE ACCESS TO CARE

Manitoba dentists have come together to create a foundation whose primary goal is to support programs, services and outreach missions that provide dental services to underserved populations.

On November 14, the Manitoba Dental Foundation was launched at the Dare to Smile Gala fundraiser held at the Canadian Museum for Human Rights in Winnipeg.

The Foundation was established by dentists representing a cross-section of the dental profession in Manitoba.

According to Dr. Nancy Auyeung, president of the Manitoba Dental Association, one of the Foundation's goals is to provide funding for dental services to people in need. "We realize there are many dentists who donate their time, services and funds for many charitable organizations. But imagine the impact that the dental profession could have as a whole if we all come together to address the issue of access to care."

In addition to supporting programs that provide dental services to underserved populations, the Foundation will also support dental outreach education programs, oral health research that has a direct impact on patient care, and dental student education. It will also promote volunteerism in dentistry.

MANITOBA DENTAL FOUNDATION

"The Foundation was established because it is needed," says Dr. Joel Antel, president of the Foundation's board of directors. "Dentists enjoy a privileged position in society that brings with it a responsibility to ensure that those in need have access to the care we provide. The Foundation will serve as a vehicle for members of our profession and the public at large to donate financially, creating a resource to support programs that fill a void in available dental care."

The Dare to Smile Gala raised over $100,000. For more information about the Foundation or to make a donation please contact Rafi Mohammed, executive director of the Manitoba Dental Foundation at smilegala@manitobadentist.ca

Watch an interview with Dr. Nancy Auyeung, **oasisdiscussions.ca/2015/09/24/dts**

(L. to r.) Dr. Frank Hechter, Dare to Smile Gala chair; Honourable Sharon Blady, Minister of Health (Manitoba); John Prendergast, Gala keynote speaker; Dr. Nancy Auyeung, president of the Manitoba Dental Association; Dr. Joel Antel, president of the Manitoba Dental Foundation.

(L. to r.) Gary Filmon, former Manitoba premier; the Honourable Janice Filmon, Lieutenant Governor of Manitoba; John Prendergast, Gala keynote speaker; Dr. Nancy Auyeung, president of the Manitoba Dental Association; Dr. Frank Hechter, Dare to Smile Gala chair.

New Journal *Aims to Put Research into Practise*

A new dental research journal is hoping to bridge the gap between the findings of oral health researchers and the daily work of practising dentists. JDR (Journal of Dental Research) Clinical & Translational Research (JDR CTR), *published for the International and American Associations for Dental Research (IADR and AADR), will publish its first issue—in print and online—in 2016.*

Dr. Jocelyne Feine

Dr. Jocelyne Feine, professor in the faculty of dentistry at McGill University, will serve as the journal's editor. "The boards of the IADR and the AADR were concerned because research findings rarely translate into change in the community and improvement in health," she explains. "We want to make that change happen, because oral health care providers need evidence to support their work in preventing oral disease and providing care."

To strengthen the evidence base, the new journal will publish studies at all levels of evidence, as well as those using research approaches that are commonly applied in other fields but not traditionally used in dentistry, such as qualitative and participatory research. "We are initiating direct communications between the clinical and research communities, so that researchers will be more aware of the type of information needed by oral health care providers, policy makers and the public," says Dr. Feine. "The results of the studies published in the *JDR CTR* will offer evidence relevant to provision of care at all levels.

To find out more about JDR CTR, visit **IADR.ORG/JDRCTR** *or* oasisdiscussions.ca/2015/09/21/jdrctr

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Study Shows Clinical Benefits of Using Essential Oil-Containing Mouthrinse

Using a mouthrinse with essential oils after tooth brushing provides oral health benefits beyond brushing alone, according to a study published in the Journal of the American Dental Association.[1]

The researchers conducted a meta-analysis to examine the effectiveness of using a mouthrinse containing a fixed combination of 4 essential oils (eucalyptol, menthol, thymol and methyl salicylate*) in reducing gingivitis and plaque. Listerine® is the only mouthrinse brand on the market that contains essential oils in this combination. Results were compared from 2 groups: those who used an essential oil-containing mouthrinse 2 times a day for 30 seconds in addition to tooth brushing, and those who only brushed. Most of the participants also flossed if it was a requirement of the study or if it was part of their daily oral hygiene routine.

The analysis included data from 29 industry-sponsored clinical trials and over 5,000 randomized participants. The studies included in the analyses were conducted over 6 months or longer.

According to Dr. Carlos Quiñonez, associate professor in dental public health at the University of Toronto, the study results are clinically significant. "The results give you a sense of how much gain you can expect for your patients with respect to the benefit of using an essential oils mouthrinse above and beyond just tooth brushing," he says. "One thing that stood out for me was the fact that among participants who just brushed their teeth, only about 6% of them had at least 50% plaque-free sites, compared to roughly 37% of individuals who used an essential oils mouthrinse after brushing."

"From a clinical perspective, the dental team should know that recommending an essential oils mouthrinse is a good thing if one is concerned about gingivitis," adds Dr. Quiñonez. "There are going to be benefits to those individuals with respect to periodontal outcomes."

References

1. Araujo MW, Charles CA, Weinstein RB, McGuire JA, Parikh-Das AM, Du Q, et al. Meta-analysis of the effect of an essential oil-containing mouthrinse on gingivitis and plaque. *J Am Dent Assoc.* 2015;146(8):610-22.

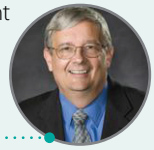
* *In Canada, Listerine® declares three essential oils (eucalyptol, menthol and thymol) as active ingredients as methyl salicylate is classified as a non-medicinal ingredient for regulatory reasons. In the U.S., all four essential oils are declared as active ingredients.*

A panel discusses the issue of possible study bias

Is this study biased? The results are based on clinical trials sponsored by Johnson & Johnson (J & J), the manufacturers of Listerine®. Of the 9 study authors, 7 are employees of J & J, 1 was an employee of J & J when the paper was written, and 1 is a consultant for J & J.

*We asked an expert panel for its opinion. Dr. John Gunsolley (**JG**), is one of the study authors, a professor at Virginia Commonwealth University and a consultant for J & J; Dr. Jane Zhang (**JZ**) is also a study author and a research manager in Global Scientific Engagement at J & J; and Dr. Carlos Quiñonez (**CQ**) is an associate professor in dental public health at the University of Toronto.*

JG: Full disclosure, I'm a consultant with J & J. Classically, there are really 2 sources of bias: the studies themselves and the meta-analysis, or the way you put it together. The studies in this paper are all J & J studies but the protocols are consistent across the group of studies. Excluding studies is one of the main sources of bias when people put studies together but we included studies regardless of their outcomes.



JZ: I want to add that our individual study followed ADA guidelines for chemotherapeutical products for gingivitis control. So there are standardized procedures for every study we included in the meta-analysis. We included all clinical studies that were conducted on marketed essential oil mouthrinse and had individual-level data for statistical analysis.

CQ: For full disclosure, I am not a consultant for J & J. Bias is present in all studies and of course industry support is something researchers clearly look at. But the level of rigour with which this study appears to have been conducted, the fact that protocols and all the information from the studies were made available to anybody that wants them—I think that speaks to the fact that, within reason, biases have been minimized.

Visit Oasis Discussions to hear the full panel discussion: oasisdiscussions.ca/2015/11/23/ocmr

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Fostering Oral Health Through Interdisciplinary Research

DR. ELHAM EMAMI

Elham Emami

Dr. Elham Emami is a recipient of a Canadian Institutes of Health Research (CIHR) Clinician Scientist program award, funded through the Institute of Musculoskeletal Health and Arthritis (IMHA). Her research focus is an interdisciplinary project examining access to dental care and a patient-centred outcome.

CIHR IRSC
Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

Clinician-researcher-dentist. People with this combination of professions are rare and much-needed in the field of oral health research. Dr. Elham Emami is that and more. A clinical scientist with a master's degree in prosthodontics from the University of Montreal, she is an associate professor in the Department of Restorative Dentistry, director of the Oral Health and Rehabilitation Research Unit, and a research associate at the University of Montreal Hospital Research Centre (CRCHUM). At McGill University, where she completed a doctoral program in biomedical science through the joint McGill–University of Montreal program, she is an adjunct professor in the Faculty of Dentistry. Last but not least, Dr. Emami held postdoctoral fellowships in both dental public health (McGill), and cancer epidemiology with the Environmental Epidemiology and Population Health research group (University of Montreal).

Becoming a Clinician-Researcher

Though being a dentist was not Dr. Emami's dream job or lifetime wish, the honours student with high grades in health science started out as one. Looking back, she is glad to have had the opportunity to help others in that capacity, but she wanted more. "Although I had total job satisfaction, inside I was sorry not to have pursued postgraduate education: I love to be at school, to learn and learn!"

Scientific curiosity compelled her to be more than a clinician, while the desire to maintain direct contact with patients succeeded in helping her to bridge the gap between research and clinical care. When the opportunity arose, she returned to school, studying prosthodontics. "You treat patients who have lost one of the major body parts, their teeth, and you try to give them back their daily life functions and well-being—things such as eating, speaking and smiling with confidence," she explained.

At the undergraduate level, Dr. Emami's thesis work involved an interdisciplinary community project investigating how dentists or their patients could be involved in drug abuse. "This was my introduction to research and its role in clinical dentistry," she said.

Later, as a dentist working in public and private sectors in diverse geographical locations and with different population and age groups, she began to understand how different biological, environmental and societal factors can influence oral health. "I was able to resolve some of my patients' oral health problems," she said, "but there was no scientific evidence to support therapies for many others. Thus my mind turned to certain hypotheses I wished to test."

The most compelling aspect of researching oral health for Dr. Emami is that "the burden of poor oral health and its associated costs are considerable." She explained, "Evidence shows an association between oral health and quality of life, psychosocial disabilities and systematic diseases."

Evidence shows an association between oral health and quality of life, psychosocial disabilities and systematic diseases.

Research Program

Dr. Emami is particularly interested in looking at the different factors affecting oral health in the context of general and public health, to see how best to implement evidence-based approaches and translate knowledge into informed decision making. To achieve this, her research program is multidimensional and collaborative, with the ultimate goal to decrease the burden of poor oral health at the individual, community and population levels. Broken down into her three research themes, her goals are:

- Intervention: testing prosthetic treatments to improve oral health and quality of life of edentulous people;
- Access: addressing social and geographic distance barriers in accessing dental care services;
- Impact: understanding how poor oral health can affect general health.

She explains, "In the intervention theme, I am conducting clinical trials to test the effectiveness of prosthodontic interventions in the promotion of oral health, general heath and quality of life for edentulous individuals, especially elders. Through this theme, I am currently leading a CIHR-funded randomized control trial to the test the effect of wearing the prosthesis at night on sleep and quality of life of elders.

"Through the access theme my research helps to better understand the social and spatial pathways of oral health disparities. I have established a strong partnership with rural and remote stakeholders, and developed a series of ongoing collaborative community-based projects to develop and implement innovative strategies targeting oral health prevention and promotion. Recently, CIHR funded our knowledge synthesis project on the integration of oral health in primary health care.

"Finally, the impact theme provides causal explanations on the role of oral health in overall health. In our ongoing research project on this theme, we are investigating the role of poor oral health in the risk of sporadic colorectal cancer."

Visit **jcda.ca/article/f9** to read more about a workshop on caries disparity that Dr. Emami co-organized.

Sustainability Through Partnership

In her research program, Dr. Emami has established and continues to maintain strong partnerships with decision makers, researchers and health professionals, building on trust, common understanding and interests, shared insights and collaborative decision-making and work. The most important message Dr. Emami wants to share about her research program with policy makers, dentists, oral health researchers and patients is that, "We live in Canada, one of the best places in the world for observing icebergs. So let's apply the 'iceberg model' to oral health and use a systems thinking approach to share our responsibilities in maintaining an optimal level of oral health at the population, community and individual levels."

Regarding the future of oral health research, Dr. Emami advises, "To ensure the sustainability of the clinician-scientist career, especially in oral health, we should work at the undergraduate level. It is necessary to implement academic programs and educational policies that increase dentistry students' awareness of—and motivation toward—such careers. Doctoral programs (DMD, DDS, PhD) need to be encouraged in Canadian dental faculties, and the evaluation of existing programs could lead to a better understanding of their effectiveness and their challenges. Financial incentives such as scholarships and ensuring tenure-track positions for clinicians-scientists would likely support the growth of this profile."

A version of this article originally appeared in the April 2015 edition of *IMHA On the Move!*—the CIHR-IMHA monthly publication. CDA thanks CIHR-IMHA for granting permission to re-publish this article.

In the intervention theme, I am conducting clinical trials to test the effectiveness of prosthodontic interventions in the promotion of oral health, general heath and quality of life for edentulous individuals, especially elders.

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1. Gillam DG, et al. *J Clin Periodontol*. 1996;23:993–997. **2.** Morris A, et al. Efficacy of a potassium nitrate mouthrinse for relieving dentinal hypersensitivity, IADR/AADR/CADR 87th General Session and Exhibition, April 1–4 2009. **3.** Pereira R, et al. *J Periodontol*. 2001;72(12);1720–1725. **4.** GSK Data on File (Study RH01751). A clinical study investigating the efficacy of a mouthwash in providing long term relief from dentinal hypersensitivity. Prepared March 2014. GCSAE/CHSENO/0256/13.

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Patient Communication Scenario: HOW WOULD YOU DEAL WITH A FEARFUL CHILD?

On Oasis Discussions, we presented dentists with the following scenario:

An 8-year-old girl coming in for routine dental work refuses to get in the chair. She is visibly upset and shaking, as is her mother. Despite your best attempt to reassure her, she still refuses to undergo treatment.

Her mother explains that both she and her daughter have had bad experiences at the dentist before, and are generally afraid of needles and medical visits. How do you handle this situation?

We asked a pediatric dentist and a clinical psychologist for their advice. Dr. Ross Anderson is division head and assistant professor in the department of dental clinical services, division of pediatric dentistry, at Dalhousie University. Dr. Christine Chambers is a professor in the departments of pediatrics and psychology and neuroscience at Dalhousie University.

Ross Anderson

Christine Chambers

Watch an interview with Drs. Anderson and Chambers at **oasisdiscussions.ca/2015/09/25/fccr**

How common is this scenario in Canadian dental practices today?

RA: As a pediatric dentist, I see a lot of these children on referral but I think it's common in general practice.

CC: It's very common. Studies show that on average, 1 in 10 children has a significant medical fear or phobia, including dental-related anxiety.

What makes kids afraid of the dentist?

CC: There are a variety of reasons why kids become fearful around medical or dental procedures. One is they've had a negative experience and it primes them to feel anxious the next time. But some children just have a more anxious temperament, even if everything has gone well.

RA: The literature shows there are a couple of things we can use to predict a child's behaviour. One is the parent's feelings about going to a dental appointment; if the parent is fearful, the child is going to be fearful. The other one is to ask the parent how they think the child is going to do at the appointment.

What's your advice on how to deal with the fearful child described in the scenario?

RA: We have to consider if this is an acute situation—do we absolutely need to get something done or can we delay treatment and work on building a trustful relationship with the parent and child.

CC: One thing you have to take into account is a child's age because their developmental level is key to what they're able to understand. Often, it just means taking a couple of extra minutes to make things clear; explain what's going to happen, demonstrate, or show a photo. Distraction is such an effective strategy in young children. Research shows that even prompting children to take some deep breaths before a procedure can calm them down.

Sometimes it's the parent who is overcome by their own anxiety. Give some clear directives to the parent about what they could be saying or doing to be helpful. General good behaviour management principles include being clear, giving calm

commands, not asking too many questions of the child, and giving the child something to look forward to at the end of the dental appointment. That treat from the treasure chest, the praise for doing a good job—these are all very meaningful for children.

RA: Sometimes it's helpful to involve the child in the procedure, even if it's just getting them to open their mouth, allowing them to hold an instrument, or letting them raise their hand up when they need to talk.

Once you manage to get the child into the chair, do you keep the parent in the room?

RA: Working with parents is key. Many times I chat with the parent alone before the child comes into the room and I'll say, 'We recognize the difficulty here, I'd really like your help so I can build trust with your child; if you don't mind, I'll ask you to chime in when I'm chatting with your child.' I love having parents in the room. I'm always eyeing the situation—does the child need extra comfort? If the child is reaching her hands out and the parent is across the room, I'll say, 'Tell you what, I'm going to get mom to come and hold your foot so you know mommy's there. Would that be a good thing to do?'

How can we prevent this situation from happening?

RA: It starts long before the child arrives at the office. Dentists can send out letters or use their websites to outline what you hope to accomplish in a visit. For anxious children, you can get them to come in and tour the office before their appointment. Help them establish a friendship with a staff member who is good with kids. Do an assessment ahead of time to obtain past dental, medical, social history. You really have to know your patient and what they're capable of. Often, the first place I meet kids is in the waiting room, where we can chat and do the high fives.

CC: Some families get so stressed about taking their children to a dental appointment that they don't tell them in advance because they don't want their kids to give them any resistance. So a child can show up and only realize in the waiting room what is about to happen. Dentists can take a kid-friendly approach through the materials provided in the waiting room and in the types of objects and activities that are available in the operatory. Think about some simple things to help make the experience positive for the child and family.

Read Dr. Gillian Smith's response to this scenario. Dr. Smith, a general dentist based in Ireland with post-graduate qualifications in conscious sedation, says that "having a scared child in the chair is a scenario I deal with every day."

oasisdiscussions.ca/2015/09/28/pedo

Resources on dental visits for the anxious child

- *Guideline on Behavior Guidance for the Pediatric Dental Patient,* by the American Academy of Pediatric Dentistry.

  aapd.org/media/Policies_Guidelines/G_BehavGuide.pdf

- The Autism Speaks Dental Tool Kit includes a dental guide for families and a video on dental health for children with autism.

  autismspeaks.org/family-services/tool-kits/dental-tool-kit

RA: We should be establishing these relationships with families in the first year of life. First visit, first tooth—that's our main message. So we can work with children from the beginning to prevent problems later on.

When do you call in outside help?

RA: I'm a pediatric dentist with training in guiding behaviours, either pharmacologically or non-pharmacologically, but I often have to rely on other experts. I'm not averse to making referrals to other practitioners, like a psychologist, who can help.

CC: A lot of parents, health professionals and dentists aren't aware of how helpful a trained psychologist can be in treating phobias. If the anxiety and fear is so severe that the situation cannot be managed in the room, it is appropriate to refer to a psychologist with expertise in exposure techniques and cognitive behavioural strategies. Sometimes the child, the family, and even the dentist may be in over their head, and a little bit of support can turn the situation around.

The views expressed are those of the author and do not necessarily reflect the opinions or official policies of the Canadian Dental Association.

This interview has been edited and condensed.

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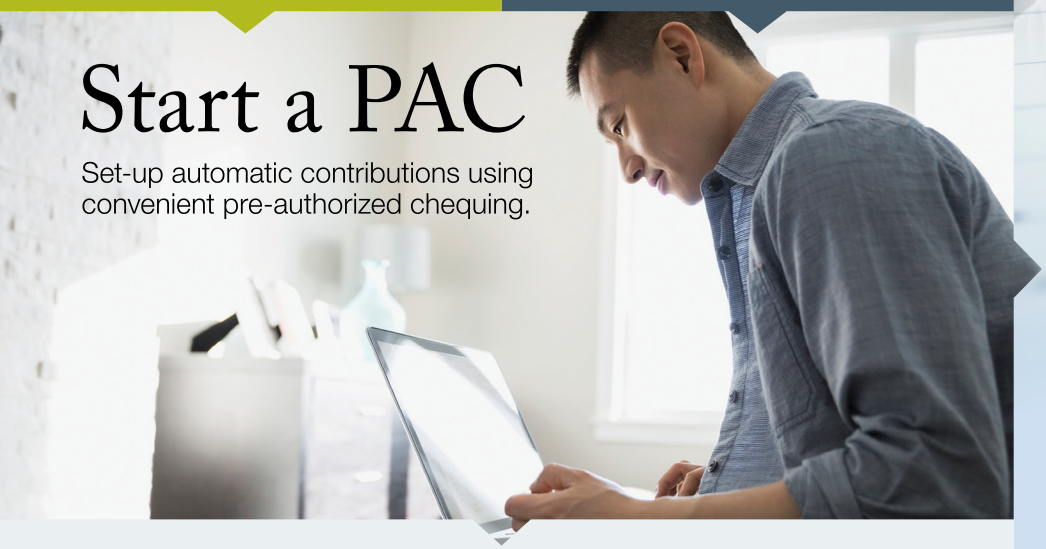

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McGILL PROFESSOR A PIONEER
in the field of oral health technology assessment

Early in his career, before Dr. Shahrokh Esfandiari became McGill University's "evidence-based guy," associate dean academic affairs, and associate professor in the faculty of dentistry, he was curious about how big decisions were made in dentistry—decisions that might have an impact on a dental practice, a community, or the dental profession as a whole.

Shahrokh Esfandiari

DMD, PhD

McGill | Faculty of Dentistry

His interest in evidence-based decision-making sharpened when he was considering the purchase of a CBCT machine for his practice. "I basically wanted to know if I was getting a 'bang for every buck' I spent on a CBCT machine," he says. "Dentists spend a huge amount of money on technologies that may not be as useful as they think they are."

Technology is more than just tools and gadgets

When he discovered the field of Health Technology Assessment (HTA), Dr. Esfandiari found exactly what he had been looking for. HTA, according to the International Network of Agencies for Health Technology Assessment (INAHTA), is the "systematic evaluation of properties, effects, and/or influences of health care technology. It may address both the direct, intended consequences of technologies and their indirect, unintended outcomes." Dr. Esfandiari explains that people often have trouble understanding what the "technology" part of HTA refers to. "Essentially, anything you can possibly think of that involves providing health to a number of constituents—that medium can be interpreted as a technology," he explains. An MRI scanner, water fluoridation, or a dental handpiece—these all fit this broad definition. "It's not necessarily a digital gadget like a mobile phone or tablet."

HTA is a relatively new field but has increasing influence in decision- and policy-making in Canada and around the world.[1] "There are many countries that put HTA reports up front, and they make their decisions about health care mechanisms based on these reports," explains Dr. Esfandiari. He cites an Australian government review of water fluoridation as an example of the complexity that can be involved in producing an HTA. "You can imagine the social, ethical and legal bearing of these kinds of technologies. The fluoridation report took a couple of years but the Australian government had solid evidence in their hand and felt confident that implementing the program would be beneficial to the population."

A first in Canadian dentistry

Before Dr. Esfandiari discovered HTA, no Canadian dentist had been trained in how to conduct an HTA. "To be honest, there are no formally recognized HTA experts in dentistry. Most of my training was based on a medical model, and I transferred it to dentistry," he says. When he enrolled in a program for international HTA and management (called the Ulysses Program), most of the students in his cohort were working internationally to provide government decision-makers with sound advice. "Everyone was questioning why a dentist would be in this program," he recalls. "But most people were working in systems where there was a significant public health component to decision-making. I soon realized the niche for dentistry, and how our profession could benefit from HTA." He coined a name for this niche: oral health technology assessment, or OHTA.

Introducing students to evidence-based decisions

Dr. Esfandiari now uses his OHTA skills to train graduate students at McGill, where he teaches them the basics of HTA and scrutinizes the technologies they're exposed to. "Many decisions made by educators and general practitioners are not necessarily evidence-based, although we like to think they are. We have not exhaustively looked into the different attributes of these technologies," he says. "And I think we have an ethical and legal responsibility to make sure that what we teach and bring to the population is based on solid ground and solid evidence. That is my passion."

Reference

1. Esfandiari S, Feine J. Health Technology Assessment in Oral Health. *Int J Oral Maxillofac Implants.* 2011;26 Suppl:93-100.

In His Own Words

Dr. Esfandiari recommends these HTA resources

- The 'bible of health technology assessment' across the world is **The International Network of Agencies for Health Technology Assessment** (INAHTA). Their website has good resources and links to many reports. **inahta.org**
- **The Canadian Agency for Drugs and Technologies in Health** (CADTH) is a Canadian member of INAHTA. You can view dental HTA reviews on its website: **cadth.ca**. CADTH is currently inviting interested individuals to propose topics for future CADTH Health Technology Assessment or Optimal Use projects. **cadth.ca/medical-devices-call-topics**
- I published the first book on oral health technology assessment and it's sort of snowballed from there. **Oral Health Technology Assessment, Study of Mandibular Two-Implant Overdenture**, (2010), S. Esfandiari; Lambert Academic Publishing, Germany.

I think we have an ethical and legal responsibility to make sure that what we teach and bring to the population is based on solid ground and solid evidence.

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Research Summary

*The following is based on a research article originally published in the "Applied Research" section of **JCDA.ca**—CDA's online, open access scholarly publication that features articles indexed in Medline, Journal Citation Reports and Science Citation Index.*

Dental Students' Perspectives on Rural Dental Practice

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The shortage of dentists in rural and remote communities is a persistent challenge for the Canadian health care system.[1-7] Many factors impede the recruitment and retention of dental care providers in rural and remote areas,[20] including sociodemographic characteristics, environmental barriers, income, and lack of professional and familial support.[2,3,16,20-23] Researchers from the Université de Montréal and McGill University explored the knowledge and perspectives of Quebec's future dentists regarding rural dental practice and their career intentions in an article published on JCDA.ca.

Interviews were carried out with 10 women and 7 men from the Université de Montréal and McGill University, aged 22–39 years. Thirteen participants were 4th-year dental students, and 4 were residents in orthodontics and prosthodontics. Most participants described their socioeconomic status as average, but emphasized their high level of debt resulting from the cost of their education.

Face-to-face, semi-structured interviews were conducted and audio-recorded. Each interview started with questions regarding level of knowledge about rural dentistry, followed by more specific questions about the participant's perspectives and expectations.

Results

Five major themes emerged from the interviews.

❶ Awareness of Access to Oral Health Care in Rural Areas

Most students were aware of disparities between rural and urban regions with regard to availability of dental personnel and access to dental services. However, they were less clear about the causes of these disparities and health care policies that could improve the situation. Students were exposed to underprivileged populations via outreach programs, community dentistry and courses in dental public health, but these academic activities did not focus on rural communities.

A few students mentioned that representatives of dental recruitment agencies and dental companies were their main sources of information about rural dentistry. Some, especially those with a rural background or with work experience in rural and remote areas, had more knowledge on the issue.

❷ Image of Rurality

Most recognized that rural areas are different from urban areas; they associated rural regions with a slower pace of life and a family-oriented environment. A few students appreciated the

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Access the full-text article at **jcda.ca/article/f23**

Photograph: Destination Canada

supportive social interactions among rural community members and thus believed that dentists would have a sense of belonging to the community.

③ Image of Rural Dental Practices

Participants perceived rural dental practices as having a high level of autonomy associated with great responsibility and multitasking. Most were positive about the working hours, type of clientele and absence of competition between dentists. A few mentioned that the lack of specialists in rural areas would increase the workload of general dentists and the nature of the treatments they offer.

Furthermore, they mentioned the critical importance of a dentist's reputation in small rural communities: "In a small town your reputation is everything.... You're getting feedback from your patients."

④ Perceived Barriers to Rural Dental Practices

Three subthemes emerged in this area.

- *Proximity maintenance and separation distress:* The desire to remain close to people to whom they are emotionally attached and the fear of isolation were psychological concepts that emerged from the discussions. Most students with an urban background were concerned about giving up their metropolitan lifestyle for a rural way of life.
- *Fear of the unknown:* Participants without a rural background or rural experience expressed fear resulting from their lack of knowledge and uncertainty about the nature of rurality and rural dental health care services. In addition, lack of confidence in treating rural patients emerged in their comments.
- *Lack of infrastructure, resources and professional support* was also considered to be a disadvantage of working in rural areas for most dental students.

⑤ Perceived Enablers of Rural Dental Practices

Four subthemes emerged on this topic.

- *Highlighting the advantages of rural dental practice:* Participants mentioned the importance of providing students with more information about the positive aspects of rural dentistry and working in rural and remote regions. They suggested putting effort into social networks for knowledge dissemination among young dentists.
- *Monetary and non-monetary incentives:* Participants suggested debt forgiveness and tax bonuses as effective initiatives, addressing the debt phobia of the majority of dental students. They also explained that the government could intervene to support health care professionals financially and psychologically. However, some believed that government already offers enough incentives and that, being part of an autonomous industry, dentists resist government measures.
- *Creating job opportunities for spouses:* Most of the female participants perceived their partner's career as an important factor in decision-making and retention. However, they knew creating job opportunities requires collaborative efforts between government employment bodies and rural communities.
- *Dental education:* Participants suggested that dental schools could contribute to improving rural dental practice by adopting rural-oriented admission strategies and dental curricula and exposing students to rural regions.

Discussion

This study raises awareness of the role of academia and policymakers in providing appropriate education and infrastructure for rural dental practices. Different models of education and curricula should be developed to promote social dentistry and prepare students for working in underserviced areas. Development of a rural residency dental program with adequate governmental financial support could be a target strategy.

Evidence from successful programs in the United States, Australia and other countries shows that these programs are effective in terms of raising students' awareness, increasing their knowledge and promoting a positive attitude toward future rural practice.[11,14,38] Furthermore, it might help students understand the significance of their contribution to the oral health of underserved populations[22,39,40] and increase their sense of professionalism and social responsibility.[40]

The results indicate that students with rural upbringing and experience might be more interested in a rural career and more sensitive to the needs and demands of remote communities.[12,15,41-46] These findings support the policies of certain dental faculties in regard to the selection of students from rural and remote areas.[13,46] Strategies such as psychosocial education, rural infrastructure development and entrepreneurship, creation of job opportunities for partners and families, as well as monetary incentives could be beneficial in addressing rural deprivation.

Our findings also show that while monetary incentives could be motivators[3,23,48-53] and might increase recruitment of dental personnel, they might not have an effect on dentist retention in rural and remote areas.[22,54] This highlights the need to focus on non-monetary incentives such as access to professional support and job satisfaction.

It is interesting to note that although the students' profiles varied in terms of year of education (undergraduate students versus specialty residents), they shared common perspectives with regard to practice location.

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Oasis Discussions

Ask Your Colleagues

Do you have any burning clinical questions related to your everyday practice? Are you facing a challenging clinical case and need advice? Send your queries to Oasis Discussions for expert guidance. The following question was submitted to Oasis Discussions by a general dentist. Drs. Mary Dabuleanu, Gevik Malkhassian and Suham Alexander provided a response.

Question

Are more conservative root canal preparations and smaller tapered files better in preserving tooth structure during endodontic treatment? The trend seems to be shifting from large tapers (0.08 and 0.06) coronally plus large apical size files (30, 35) to keeping canals narrow so that tooth structure is preserved and fractures are prevented. Please advise.

Response

Endodontically treated teeth are often compromised structurally and fracture is one of the main causes of failure of endodontically treated teeth. The amount of remaining sound tooth structure plays a significant role in the fracture resistance of these teeth.[1]

Preservation of healthy tooth structure might be achieved by:

- Conservative access preparation
- Conservative dentin removal at the cemento-enamel junction (CEJ) level
- Conservative preparation of apical root dentin

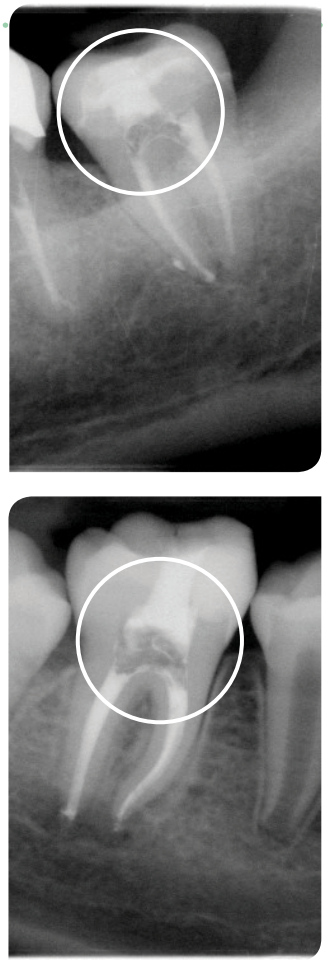
Conservative access preparation

This can be achieved by reducing the size of traditional access cavity preparations or modifying the position or shape of the access cavity without compromising proper access to the root canal system. New approaches in preparing access cavities focus on preserving more coronal tooth structure, to the extent that some clinicians even advocate creating an endodontic access without completely unroofing the pulp chamber (**Fig. 1**).

Conservative dentin removal at the CEJ level

This can be achieved by limited removal of peri-cervical dentin (PCD), which is defined as the dentin at 4 mm above and 6 mm below the CEJ.[2] The PCD is the most common site of diagnosed root fractures[2] (**Fig. 2a** and **2b**).

The PCD is preserved by minimizing use of round burs and Gates Glidden drills when accessing the teeth and enlarging orifices and minimizing the coronal taper preparation of the root canals. The EndoGuide® bur system (SS White®, Lakewood, NJ) is an example of a set of burs that may be used for access and orifice enlargement in order to conserve dentin.



Examples in teeth 37 and 46 of a conservative endodontic access.

Figure 1

Several new instruments have been introduced to improve flexibility of the nickel-titanium (NiTi) alloy and conserve more tooth structure in the coronal

third of canals. Whereas first generation NiTi rotary files were developed with a constant taper such as 0.04 (4%) or 0.06 (6%),[3] the newer generations of NiTi rotary instruments have been designed with variable tapers along one file. A few examples of these instruments are PROTAPER NEXT®, WaveOne® GOLD and TRUShape® (DENTSPLY Tulsa Dental Specialties, Tulsa, OK). The V-Taper™ Rotary System (SS White®, Lakewood, NJ) also aims to conserve root dentin.

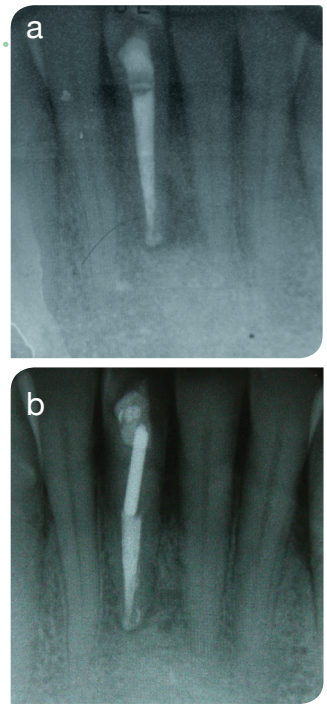
Conservative preparation of apical root dentin

More conservative and less tapered root canal preparations seem to be the key to reducing catastrophic fractures in endodontically treated teeth. However, larger apical preparations could improve irrigation and debris removal from critical regions of canals.[4,5] Most NiTi instruments have been designed with this concept in mind. Nevertheless, optimal apical enlargement remains a controversial topic.

Other considerations

The amount of remaining tooth structure, though critical, is only one of several factors affecting the fracture predilection in endodontically treated teeth. The choice of restoration (posts, cores and coronal coverage) is equally important. Other factors that can affect the fracture resistance include the endodontic irrigant and medicament used during treatment. Intra-canal bacteria can also induce degradation of dentinal collagen, affecting dentinal strength. Moreover, age-related dentinal changes have been shown to adversely affect the strength and toughness of dentin.[6]

Ultimately, it is the clinician's decision to modify his or her conventional approach to endodontic access and canal preparation. Implementing conservative endodontic treatment approaches in one's daily endodontic practice should only be undertaken once there is a clear understanding of the advantages and limitations of these new techniques.



Radiographs illustrating a case in which endodontic treatment was performed on tooth 41 and the sequelae following treatment.

a) Root canal treatment for tooth 41 is complete. Note the excessive coronal taper that has violated the PCD. Probing depth is 2–3mm circumferentially. Note the periapical lesion and height of the crestal bone.

b) Follow-up radiograph taken 5 years after completion of treatment. Patient complains of pain to chewing. Note that the periapical lesion has healed almost completely. However, a new J-shaped mesial defect is evident on tooth 41 to the apical extent of the post. This mesial bone loss coincides with a new 6-mm narrow periodontal pocket. One can suspect that vertical root fracture might have occurred due to violation of PCD and post placement. Tooth 41 is hopeless and extraction is advised.

Figure 2

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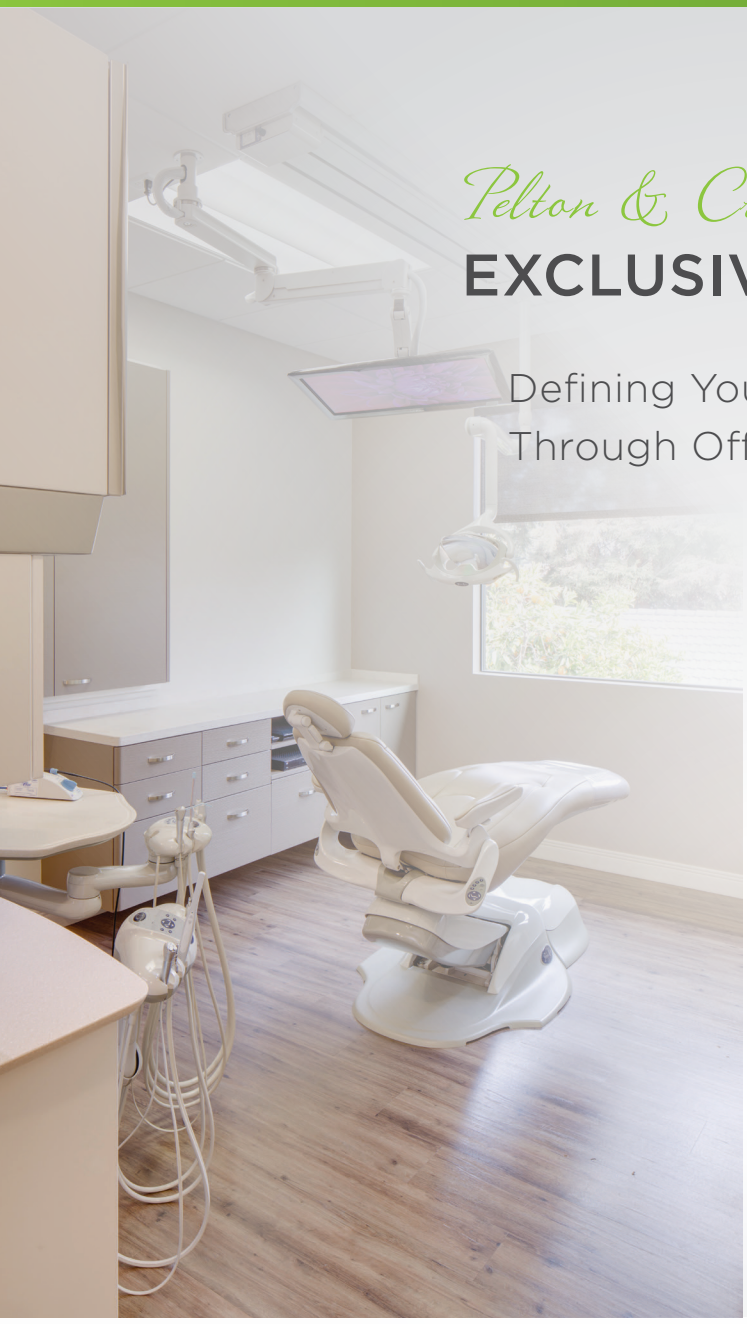

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Outpatient Medication: Use and Implications for Contemporary Dental Practice

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Data from the Canadian Institute for Health Information (CIHI) shows that 62% of Canadians age 65 and older are using 5 or more classes of prescription drugs.[3] Age-related physiological changes, a greater degree of frailty, a larger number of coexisting and comorbid conditions and polypharmacy have all been associated with increased risk of adverse events.[4,5] Knowledge of a patient's medication use is therefore crucial to map their medical history and may have implications on the delivery of dental care. In addition, oral complications of systemic medications have repercussions in oral care, and potential interactions between these medications and medications used in dentistry should be recognized.

To get a better picture of the current situation and to review the oral implications of commonly used medications, a research team recorded medication use in patients referred to a large private periodontal practice in Ottawa.

A total of 322 patients enrolled in the study; 164 were female and 158 male. Their median age was 52 years (range 6–94 years). Medication use, self-reported in health history forms on admission, was confirmed through patient interviews. The higher proportion of older patients makes periodontal practices a good setting in which to examine medication use in a demographic group that typically takes many medications. In this study, 63.7% of patients reported taking at least 1 medication. The total number of medications taken ranged from 0 to 14 per patient.

Antihypertensive medication

A number of factors can alter control of blood pressure, and treating patients with uncontrolled hypertension may be associated with serious risks. For patients on antihypertenisve medication (35.4% of the study population), measuring their blood pressure before and after procedures can both minimize the risk (e.g., detecting acute hypertensive or hypotensive crises) and provide valuable feedback on the hypertensive therapy for the patient and their clinician. During dental appointments, blood pressure should be monitored and recorded, and local anesthetics containing a vasoconstrictor should be delivered cautiously following careful aspiration.[13] If hypertension is not controlled, dental treatment should be delayed and medical attention sought.[14]

Antihypertensives are common causes of xerostomia and some drug classes, such as the angiotensin converting enzyme (ACE) inhibitors, are known to cause oral complications including burning mouth and mucosal reactions, such as lichenoid drug eruptions.[16] Nonselective beta-blockers (e.g., propranolol, nadolol) enhance the pressor response to epinephrine, resulting in hypertension and bradycardia. Also, clinicians must exercise caution when prescribing non-steroidal anti-inflammatories (NSAIDs) to those on ACE inhibitors or beta-blockers as NSAIDs reduce the excretion of antihypertensives, that can result in increased serum concentrations and increased blood pressure by an average of 5 mmHg.[17]

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Thus NSAIDs must be used with caution, and blood pressure should be closely monitored during treatment. Finally, calcium channel blockers, in conjunction with poor oral hygiene, cause drug-induced gingival enlargement in about 20% of the population taking these medications.[18] Evidence demonstrates a strong association between periodontitis and athlerosclerosis,[15] thus there may be more patients on antihypertensive medication in a periodontal practice.

Dietary supplements and vitamins

Dietary supplements were the second most common medications taken by study patients (21.7%), while vitamins were fourth (12.1%). In general, medications commonly prescribed by dental professionals can be given without regard to interactions with dietary supplements, although patients taking ginkgo biloba, St. John's wort, evening primrose or valerian should consult with their primary care provider before taking these supplements with other prescribed medications.[19] Dental professionals can consult clinical databases such as the Natural Medicines Comprehensive Database[9] to help understand supplement-drug interactions. This tool and others like it are helpful in classifying interactions according to the level of risk they pose to the patient.[20-23]

Antithrombotic medication (blood thinners)

Anticoagulants (2.2%) and antiplatelet agents (10.2%) have obvious implications for dental care. In addition to warfarin, 3 newer anticoagulants are now commonly available (dabigatran, rivaroxaban and apixaban), and, in addition to aspirin, a number of newer antiplatelet agents (clopidogrel, ticlopidine, prasugrel, ticagrelor and vorapaxar) are also available. The timing of these medications with respect to dental surgery is important as treatment schedules may have to be modified to reduce the risk of prolonged bleeding following surgery.[24-26] Stopping some of these medications before treatment could put patients at risk of a thromboembolic event. Consultation with the treating physician is often needed because of the propensity of these drugs for interactions with other drugs, diet and supplements, and the critical nature of coagulation.

Centrally acting and psychiatric medication

These medications were used by 9.9% in the population studied. Oral complications resulting from these therapies commonly include xerostomia, with risk of oral and dental complications of hyposalivation and increased or altered muscle function.[27,28] Selective serotonin reuptake inhibitors (SSRIs), such as fluoxetine and paroxetine, have been associated with increased bruxism and risk of dental attrition and temporomandibular disorders,[29,30] whereas tricyclic antidepressants (TCAs) have significant anticholinergic effects in some patients, including hypertension, increased intraocular pressure and xerostomia.[31,32] Interactions may occur with medications commonly used in dentistry. For example, levonordefrin has a significantly higher risk of causing hypertension among patients on TCAs. As such, anesthetics containing this vasoconstrictor (e.g., mepivicaine 3% with 1:20 000 levonordefrin) should be avoided. Also, patients taking SSRIs should avoid taking NSAIDs as there is an increased risk of gastrointestinal bleeding with long-term use over 4 days.[8,33]

Diabetes medication

Patients on medications for diabetes comprised 9.0% of the patients surveyed. There are many well-established associations between diabetes, periodontal disease and wound healing[34]; thus dental professionals must know the patient's history and glycemic control. People with diabetes are at increased risk of periodontitis, peri-implantitis, xerostomia, secondary fungal infections and taste changes.[35-37] In addition, glycemic control can be compromised following dental treatment if oral pain is experienced and oral intake is compromised. Those with uncontrolled diabetes may be at greater risk of oral complications; healing of surgical wounds may be delayed in poorly controlled diabetics and the need for perioperative antibiotic prophylaxis may be considered.[38,39]

Hypolipidemic (cholesterol) medication

Hypolipidemic medication was taken by 7.5% of patients, with statins being the most prevalent prescription. Although this is not typically a cause for concern in dental treatment, it may be associated with a number of drug interactions, including with drugs commonly prescribed in dentistry (clarithromycin, and azole antifungals such as fluconazole).[8]

Analgesics

Analgesics were used by 7.5% of the population studied; half were taking NSAIDs, and the other half opioid analgesics. Patients may be taking NSAIDs chronically for various reasons, and few cause dental concerns. Notably, concerns include the patient's ability to achieve adequate postoperative hemostasis, as these medications inhibit platelet aggregation and prolong bleeding time in some patients.[40]

NSAIDs and acetaminophen are the drugs of choice in managing postoperative dental pain that is secondary to inflammation. Opioids are not considered the drugs of choice for this indication.[41,42] Only after the dose of the NSAID or acetaminophen has been optimized should opioid medication be prescribed for the shortest time possible postoperatively (3 days or less).

According to the United States Food and Drug Administration (FDA), NSAIDs can interfere with the antiplatelet effect of low-dose aspirin (81 mg/day), potentially rendering it less effective when used for cardioprotection and stroke protection.[40] Should these drugs be used concomitantly, the FDA recommends that ibuprofen be taken at least 30 minutes after aspirin ingestion or more

than 8 hours before aspirin ingestion, to avoid attenuation of aspirin's effect. With occasional use of ibuprofen, the risk of any attenuation of the antiplatelet effect aspirin is likely to be minimal, because of a long-lasting effect of aspirin on platelets.[43,44] Patients taking opioids may have increased dry mouth as a side effect, and sedative agents should be used with caution or avoided because of potential synergistic central nervous system depression that can be caused by this combination.[8]

Thyroid medication

Thyroid medication was taken by 6.2% patients. Hypothyroid agents, such as levothyroxine, affect the basal metabolic rate and can have an impact on systemic status, including blood pressure, energy and mood.

Bisphosphonates

A number of patients (5.3%) in the study were taking bisphosphonates, primarily for osteoporosis, which should be considered in the context of the potential impact of these drugs on wound healing. Although this risk is low compared with the high risk of osteonecrosis associated with intraveinous bisphosphonate administration in oncology, oral use affects surgical management.[45-58] Dose, route of delivery and duration of bisphosphonate therapy should be addressed in the history. New agents, osteolytic inhibitors, are now available and doses used in oncology require the same considerations as bisphosphonates.[49]

Respiratory and allergy medications

Respiratory and allergy medications have implications for dental care, in particular if general anesthesia is considered. These medications should alert dentists to patients who may have a constricted airway or in whom intubation may be a challenge. Furthermore, they are often associated with dry mouth, and their use may impact oral and dental status secondary to chronic, drug-induced hyposalivation or xerostomia. In this study 5.0% were taking medications for chronic obstructive pulmonary disease or asthma. Because asthma attacks can be brought on by stressful situations or exposure to inhaled aerosols, these patients should be encouraged to have their medications on hand at all times.

Chemotherapy, immunosuppressants, corticosteroids

Patients on chemotherapy (2.2%), immunosuppressants (1.6%) or corticosteroids (0.9%) may have delayed or poor postoperative healing and may be at increased risk of surgical infections or secondary fungal infections. Perioperative antibiotic prophylaxis may be warranted in some cases and should be planned with medical or oral medicine consultation.[51]

Hormonal therapy

The use of hormone replacement therapy (4.4%) or oral contraceptives (2.2%) is known to have implications for blood clot formation and wound healing following surgical dental care.[52,53] In addition, antibiotic interactions may reduce the effectiveness of oral contraceptives, and patients should be informed of this risk. From a periodontal standpoint, patients on oral contraceptives have an increased risk of plaque-induced gingival diseases, as they experience a heightened inflammatory response to plaque biofilm.[54]

Adverse reactions and allergies

Allergy risk was also evaluated as dentists prescribe medications with the potential to cause allergic and anaphylactic reactions. Allergies to antibiotics were the most commonly reported allergies (18.9%). Penicillin produced the highest prevalence of allergies (10.9%), with sulfa medications second (5.3%).

The nature of the reaction must be investigated as many patients confuse allergic reactions with intolerances. For example, most gastrointestinal symptoms are side effects of medications rather than allergic reactions. This is important information as patients who are allergic to a medication should avoid exposure and clinicians should avoid prescribing them such drugs.

Conclusion

Given the prevalence of the use of both prescription and OTC drugs, accurate recording of a patient's medication profile is necessary to guide contemporary dental practice and mitigate potential risk. Medication use and medication allergies provide information about a patient's medical history and diagnoses that may affect the oral condition and delivery of dental care. Additional concerns include potential interactions between frequently used medications reported by patients and medications that are commonly used in dentistry, with the result that medication use by patients can impact care in contemporary dental practice. Close consideration of these issues is required to provide the best care and optimal patient safety.

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Period ending November 30, 2015

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Canadian Equity Fund (Trimark)	1.50%	-16.4%	1.9%	2.6%	2.2%	★★
Common Stock Fund (Fiera Capital)	0.99%	-1.0%	9.6%	2.8%	4.7%	★★★
Dividend Fund (PH&N)	1.20%	-5.8%	7.5%	6.1%	4.0%	★★★
High Income Fund (Fiera Capital)	1.45%	-11.9%	4.6%	4.2%	4.1%	★★★
TSX Composite Index Fund (BlackRock®)	0.67%	-6.6%	5.6%	3.0%	4.5%	★★★★
International Equity Funds						
Emerging Markets Fund (Brandes)	1.77%	-12.5%	4.2%	-0.1%	5.1%	★★★
European Fund (Trimark)	1.45%	17.8%	19.7%	16.0%	7.7%	★★★★
Global Fund (Trimark)	1.50%	17.0%	19.7%	15.2%	6.6%	★★★★★
Global Growth Fund (Capital Intl)	1.77%	16.2%	20.4%	14.6%	7.7%	★★★★★
Global Real Estate Fund (Invesco)	1.75%	13.9%	16.3%	13.0%	N/A	N/A
International Equity Fund (CC&L)	1.30%	16.0%	16.4%	11.3%	4.1%	★★★★★
Pacific Basin Fund (CI)	1.77%	7.7%	12.0%	6.2%	3.9%	★★★★
S&P 500 Index Fund (BlackRock®)	0.67%	18.7%	26.6%	19.2%	7.7%	★★★★★
US Large Cap Fund (Capital Intl)	1.46%	7.0%	21.2%	14.4%	N/A	★★★
US Small Cap Fund (Trimark)	1.25%	4.0%	18.7%	16.4%	9.0%	★★★★
Income Funds						
Bond and Mortgage Fund (Fiera Capital)	0.99%	0.8%	1.1%	1.7%	2.5%	★★★★
Bond Fund (PH&N)	0.65%	2.5%	2.9%	4.1%	4.8%	★★★★★
Fixed Income Fund (MFS)	0.97%	1.6%	2.3%	3.6%	4.0%	★★★★★
Cash and Equivalent Fund						
Money Market Fund (Fiera Capital)	0.67%	0.3%	0.4%	0.4%	1.3%	N/A
Equity and Income Funds						
Balanced Fund (PH&N)	1.20%	4.5%	10.0%	6.8%	4.8%	★★★★★
Balanced Value Fund (MFS)	0.95%	6.5%	12.0%	8.3%	5.5%	★★★★★
Corporate Class Funds						
Canadian Bond Fund Corporate Class (CI)	1.10%	1.7%	2.4%	3.7%	4.3%	★★★★★
Canadian Equity Fund Corporate Class (CI)	1.65%	-0.7%	10.8%	7.7%	N/A	★★★★
Corporate Bond Fund Corporate Class (CI)	1.25%	1.2%	4.5%	5.5%	N/A	★★★★★
Income and Growth Fund Corporate Class (CI)	1.45%	-0.7%	8.7%	7.1%	N/A	★★★★
Short-Term Fund Corporate Class (CI)	0.75%	0.0%	0.5%	0.6%	1.4%	N/A
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Index Fund Portfolios						
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Conservative Index Portfolio (BlackRock®)	0.85%	4.3%	6.8%	6.4%	5.1%	★★★★
Moderate Index Portfolio (BlackRock®)	0.85%	4.7%	9.1%	7.3%	5.4%	★★★★
Income/Equity Fund Portfolios						
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Balanced Portfolio (CI)	1.65%	4.9%	10.8%	8.0%	5.8%	★★★★
Conservative Growth Portfolio (CI)	1.65%	5.2%	11.8%	8.5%	5.7%	★★★★
Income Portfolio (CI)	1.65%	3.8%	7.0%	6.4%	5.7%	★★★★★
Income Plus Portfolio (CI)	1.65%	4.1%	8.5%	6.8%	5.5%	★★★★
Moderate Growth Portfolio (CI)	1.65%	5.7%	13.0%	9.1%	5.1%	★★★★

Listed are annual compound rates of return with all fees deducted for one-to-ten-year performance for the period ending November 30, 2015. The figures are historic results based on past performance and are not necessarily indicative of future performance. Returns are after the deduction of management fees, and so may differ from those published by the respective fund management companies. MERs are subject to applicable taxes. BlackRock is a registered trade-mark of BlackRock, Inc.

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ALBERTA - Lethbridge: Full-time/part-time associate. An excellent opportunity to work in a modern, digital family practice. Our office has an established patient base and a great team of professionals. The 6-operatory office contains digital x-rays, Itero, Biolase, Velscope and the STA wand. Experience in the areas of implants, orthodontics, and surgery would be an asset. Please email cover letter and resume in confidence to: rjat4@shaw.ca. D10578

ALBERTA - Medicine Hat: Courtyard Dental Centre has a full-time associate position available in our progressive family practice. Our well-established, modern clinic currently has 3 dentists with patient demand for 4; start with an existing patient base. Practice multi-faceted dentistry in a technologically-advanced setting. Our office is non-assignment and presents excellent income potential. New grads welcome. Please contact Dr. Jenelle Hyland, Dr. Armes Perrett, or Dr. Mike Lemeshuk at: (403) 529-1300 or email: mlemeshuk@gmail.com. D11261

ALBERTA - Stony Plain: Group practice in Stony Plain seeking associate to join our team. We are located half an hour west of Edmonton in a community-oriented town. Successful candidate will enjoy "small town by big city living", and working with children and the elderly. We are offering 3 days per week, increasing to full-time, with excellent earning potential, friendly staff, and loyal patients. Interest in aesthetics, implants, and/or IV sedation would be a rapid practice-builder. In-office childcare is available. Please email: stonydentist@yahoo.ca with your resume. D10977

ALBERTA - Stony Plain: Tremendous opportunity for a FT endodontist. Our progressive, paperless, high-tech clinic including digital radiography, is looking for an endodontist to join our practice. We are community-focused with a growing patient base. You will have an eager team that will maintain your schedule, referrals, and keep you linked to the region. We are 20 minutes away from Edmonton and have 3 highways within 2 minutes of our practice. The ideal candidate will be a seasoned dentist who focuses on clinical excellence, is a great communicator and possesses a patient rapport that is caring and informative, while still being production motivated. Our team will help you succeed, and in turn you will help us succeed. Position is available for June 2016 and we will assist with relocation for the right individual. Please email your CV in confidence to: dentalspecialist8g@gmail.com. D11542

BRITISH COLUMBIA - Castlegar: We are looking for personable, driven associates who can provide high-quality dentistry to a modern, high-tech office in picturesque BC interior. Must be available 4-5 days per week. New grads welcome. Email resume to careers@williamslakedental.com or careers@kootenayfamilydental.com #Mountain Life #40minFlightFromVan D11540

BRITISH COLUMBIA - Cranbrook: Full-time associate needed immediately. Live and work in a year-round recreational paradise, Cranbrook, BC. Rather than plan vacations you can plan your evenings and weekends. Our recent associate laments leaving the area and a full patient base. Our digital office is strong on team dynamics, continuing education and patient care. Enjoy available hospital privileges, a cooperative dental community, city amenities and a small-town lifestyle. Future buy-in possible. New grads welcome! Please respond by email to: Dr.Harris@shaw.ca. D10875

BRITISH COLUMBIA - East Kootenay Valley: Wanted: associate who is interested in living and working in the most beautiful valley in Western Canada, the East Kootenay Valley. Short drive to Montana, Idaho and Washington States. Less than 4 hours to Calgary. Fabulous outdoor activities of all descriptions; houseboats, skiing, and on and on. Should have at least 2-3 years of working experience in all aspects of dentistry and needs to be an easy-going individual with a sense of humour and great outlook on life. Please respond to: jwnesbitt@shaw.ca. D11518

BRITISH COLUMBIA - West Vancouver: Busy, well-established West Vancouver practice is seeking a part-time leading full-time dental associate who is patient-care driven, clinically excellent and motivated. Our practice is multi-faceted in a technologically advanced setting, with a holistic approach to fluoride and safe amalgam removal. Candidate would need to have similar philosophy, which can be trained.

The successful candidate must possess 5+ years' experience, with excellent communication skills and warm personality - a sense of humour is a plus. Possible prospect of buying into the practice in the future. Please email your resume to: dental.associates.apps@gmail.com. D11554

BRITISH COLUMBIA - Vernon: Full-time associate required for a modern, progressive 3-dentist practice (fully digital, paperless, Cerec AC, CT Scan, laser, etc.), located in beautiful Vernon, BC - an ideal, laid-back community only 35 minutes from Kelowna. Existing full-time associate is returning to Graduate School. Come enjoy what the sunny Okanagan has to offer - beautiful 4 season climate, world-class ski resorts and wineries, amazing lakes and beaches, and fantastic trails for biking, hiking, or whatever your outdoor enjoyment may be. It's easy to see why we all love living here! Our well-established practice has very steady new patient flow, and is an ideal opportunity to join a busy, state-of-the-art, full-service practice with great mentorship and staff in place. Future buy-in potential for the right candidate. Please email: info@pleasantvalleydental.ca. D113Ø1

HONG KONG: Hong Kong registered Canadian dentistry graduate with a minimum of 5 years practice experience to join an established dental office as an associate with a view to possible partnership. Email: admin@braga.com.hk or phone: (852)+ 25255666. D11339

MANITOBA - Selkirk: Full-time associate dentist required for an established, busy G.P. practice, 30 minutes north of Winnipeg. Practice operates Monday to Friday, no evenings. Senior owner dentist is retiring and position is available immediately. Please forward resume to: reception@redriverdental.ca. D11265

MANITOBA - Winnipeg: Greenwoods Dental Centres requires a F/T associate ASAP in the city of Winnipeg. Great opportunity to make a very high income. Existing associate moving out of province. We offer a friendly and very well managed working environment. Your schedule will be booked fully. Contact Dr. Mittal: dmittal@shaw.ca, cell: (204) 297-5344, web: www.GreenwoodsDental.com. D11538

NOVA SCOTIA - Halifax: Opportunity of a lifetime... Unique practice looking for equally unique dentist. What is unique? I can provide virtually an unlimited amount of new clients needing a broad range of dentistry, in a beautiful new dental facility. Myself and other dentists can mentor you in every aspect of dentistry, from basic restorative to the most complicated full mouth rehabilitations, and everything in between. I am looking for someone with exceptional communication skills, someone who can talk to clients and really connect. This is a special person, someone dedicated to their career who wants to have not only above average income, but the desire to become the best dentist they can be. Must have at least 5 years' experience, a great personality, and highly driven. Email your application in confidence to: daniel@danieldanieldentistry.com. D1Ø750

NOVA SCOTIA - Meteghan: We are looking for a FT Associate for our highly productive, modern practice, Southwest Dental, in Meteghan. Our practice has a large patient base and we have over 160 dental practices under Dental Corp! Discover the opportunity to join a vibrant team that continues to grow! In addition to professional flexibility and working for a highly productive office, we offer: Continuing education only offered to DCC Associates, Associate Development Program and growth opportunities to potentially be a future partner, Competitive production percentage. English and French bilingualism is considered an asset. To apply please email your resume to: andrea.romanczuk@dentalcorp.ca. D11337

NOVA SCOTIA - Sydney: We are looking for a FT Associate for our highly productive, modern practice, Mayflower Dental, in Sydney. Our practice has a large patient base and we have over 160 dental practices under Dental Corp! Discover the opportunity to join a vibrant team that continues to grow! In addition to professional flexibility and working for a highly productive office, we offer: Continuing education only offered to DCC Associates and Associate Development Program and growth opportunities to potentially be a future partner. To apply please email your resume to: andrea.romanczuk@dentalcorp.ca. D11335

ONTARIO - 26 Locations: Experienced Associate required for our well-established, busy practices. Enjoy a small town or a large city atmosphere. For more information visit our website at www.altima.ca or email us at dentist@altima.ca. D9513

ONTARIO: Full-time associateship with partnership potential. Expect to take home 20K/month. Small town practices in Newbury, Dutton, and Highgate, Ontario. 45-50 minutes from Chatham and/or London. Email: n.altarhuni@gmail.com or call: (519) 693-4525. D11532

ONTARIO - Ottawa: A full-time associate is wanted for a busy, centrally-located West end practice. It is a well-established, state-of-the-art group practice with a focus on comprehensive patient care. We have a commitment to providing the best care possible through extensive continuing education and a group learning environment. The location provides ample free parking, large well-equipped operatories, and a vast patient flow. The ideal candidate is an enthusiastic, caring, committed individual with good communication skills looking for an opportunity to provide excellent dental care to a large variety of patients from families to seniors and professionals to students, with a goal to continually enhance their skills and further the excellent care given to these patients. Please send resume to: carlingwooddental@rogers.com. D11246

SOUTHWESTERN ONTARIO: OMFS Position-Southwest Ontario. A well established group practice in London is seeking an oral and maxillofacial surgeon for an associate position leading to partnership. Our modern surgical centers and hospital based practice allow for the provision of a full scope of OMFS services. We enjoy partnering with a very supportive dental, medical, and specialist referral network in our community. We are seeking a personable, energetic, ambitious, caring individual who wishes to be part of a dynamic team and further its reputation. The candidate must be eligible for licensure to practice as a specialist in oral and maxillofacial surgery in Ontario, including Fellowship in the Royal College of Dentists of Canada (RCDC). Forward CV and inquiries to OMFSCV@gmail.com. D1Ø8Ø5

SASKATCHEWAN - Regina: Associate needed for a busy & growing general practice at Cathedral Dental Centre in Regina, Saskatchewan. The practice is well-established with a great support staff. Email: cathedraldental@sasktel.net. Full or part-time available. D11327

SASKATCHEWAN - Regina: Children's Dental World is seeking a children's dentist or orthodontist to join our fast-growing practice as associate. The ideal candidate will deal with kids dental cases with potential for future opportunities to work in an OR setting. Valid Saskatchewan dental license is an asset. Please send your cover letter and resume to: veronica@cdwregina.com. D11345

UNIVERSITY OF SASKATCHEWAN: Faculty Position, College of Dentistry. The University of Saskatchewan, College of Dentistry invites applications from qualified individuals for a full-time tenure track Academic Programming Appointment (APA) position at the rank of Assistant or Associate Professor. The primary responsibility of academic programming appointments is multi-disciplinary teaching in clinical or preclinical environments, using integration and application to improve the quality of instructional dental programs provided to our students across all disciplines. Academic Programming Appointments are expected to commit to continuous improvement of their teaching performance. Effective interpersonal and communication skills are expected. Additional responsibilities include: research activities as well as administrative duties as part of their assignment of duties. APA faculty must engage in academic programming activities, professional practice and demonstrate a scholarly approach to teaching and learning in association with dental education. Professional practice can be either clinical practice or educational practice. Faculty in this position will mentor and manage 'pods' of students in a clinical setting as directed by the Assistant Dean, Clinical Affairs. We seek general practitioners who possess a DMD/DDS or equivalent, National Dental Examining Board of Canada certification and licensure by the College of Dental Surgeons of Saskatchewan. Salary bands for this position are as follows; Assistant Professor – $93,293 - $112,109; Associate Professor - $112, 109 - $130,925. This position includes a comprehensive benefit package which includes a dental, health and extended vision care plan; pension plan, life insurance (compulsory and voluntary), academic long term disability, sick leave, travel insurance, death benefits, an employee assistance program, a professional expense allowance and a flexible health and wellness spending program. Interested candidates should submit a letter of application, curriculum vitae, three (3) letters of reference including contact information for the referees, any supporting documentation including teaching evaluations, proof of education including undergraduate and graduate degrees to: Dr. Gerry Uswak, Dean, College of Dentistry, 105 Wiggins Road, University of Saskatchewan, Saskatoon, Saskatchewan S7N 5E4, Telephone: (306) 966-5121 Fax: (306) 966-5132 email: dentfacultysearch@usask.ca. Applications will be accepted and evaluated until the position is filled. Anticipated start date is July 1, 2016. Electronic submissions by email are preferred. The University of Saskatchewan thanks all applicants for their interest; however, only applicants selected for interviews will be contacted. The University of Saskatchewan is strongly committed to a diverse and inclusive workplace that empowers all employees to reach their full potential. All members of the university community share a responsibility for developing and maintaining an environment in which differences are valued and inclusiveness is practiced. The university welcomes applications from those who will contribute to the diversity of our community. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority. D11205

UNIVERSITY OF SASKATCHEWAN: Faculty Position, College of Dentistry. The College of Dentistry invites applications from qualified individuals for a full time tenure-track position in Endodontics. The successful candidate will be required to deliver didactic, pre-clinical and clinical teaching; supervise student research projects; initiate, lead and participate in research activities; compete successfully for external funding to support this research program; and undertake relevant administrative activities including meetings and committee work. Opportunity to engage in the College's faculty practice is also available. We seek candidates who have postgraduate specialty training in endodontics at the Masters or PhD level or equivalent; an interest and ability to engage in scholarly activities as evidenced by established or developing research initiatives; a strong or emerging research program; demonstrated effective classroom teaching skills and mentorship; clinical experience in endodontics; and effective interpersonal and communication skills. Preference will be given to those who have passed the National Dental Specialty Examination in Endodontics administered by the Royal College of Dentists of Canada or certification by an American Dental Association-Recognized Dental Specialty Certifying Board. Candidates must be licensed or eligible for licensure by the College of Dental Surgeons of Saskatchewan (CDSS) and are encouraged to familiarize themselves with Saskatchewan licensing requirements: http://www.saskdentists.com/saskatchewan-licensing-requirements.html. Candidates who are graduates from non-accredited dental training programs must achieve National Dental Examining Board of Canada certification (http://www.ndeb.ca/) and/or Royal College of Dentists of Canada Fellowship (http://www.rcdc.ca/home.cfm) to achieve tenure. All candidates are encouraged to familiarize themselves with these processes. Additional information can be found at the Canadian Information Center for International Credentials: http://www.cicic.ca/professions/3113en.asp. Salary bands for this position are as follows: Assistant Professor - $90,796 - $109,108; Associate Professor - $109,108 - $127,420 and Professor $127,420 - $148,784. This position includes a comprehensive benefits package which includes a dental, health and extended vision care plan; pension plan, life insurance (compulsory and voluntary), academic long term disability, sick leave, travel insurance, death benefits, an employee assistance program, a professional expense allowance and a flexible health and wellness spending program. Interested candidates should submit a detailed curriculum vitae, a statement of teaching and research interests, a plan for future research, three letters of reference, and any supporting documents, copies of up to five selected recent publications, and proof of education including notarized, translated (English) copies of undergraduate and graduate degrees to: Dr. Gerry Uswak, Dean,

College of Dentistry, 105 Wiggins Road, University of Saskatchewan, Saskatoon, Saskatchewan S7N 5E4, Telephone: (306) 966-5121 Fax: (306) 966-5132 email: dentfacultysearch@usask.ca. Applications will be accepted and evaluated until the position is filled. Anticipated start date is January 1, 2016. Electronic submissions by email are preferred. The University of Saskatchewan thanks all applicants for their interest; however, only applicants selected for interviews will be contacted. The University of Saskatchewan is strongly committed to a diverse and inclusive workplace that empowers all employees to reach their full potential. All members of the university community share a responsibility for developing and maintaining an environment in which differences are valued and inclusiveness is practiced. The university welcomes applications from those who will contribute to the diversity of our community. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

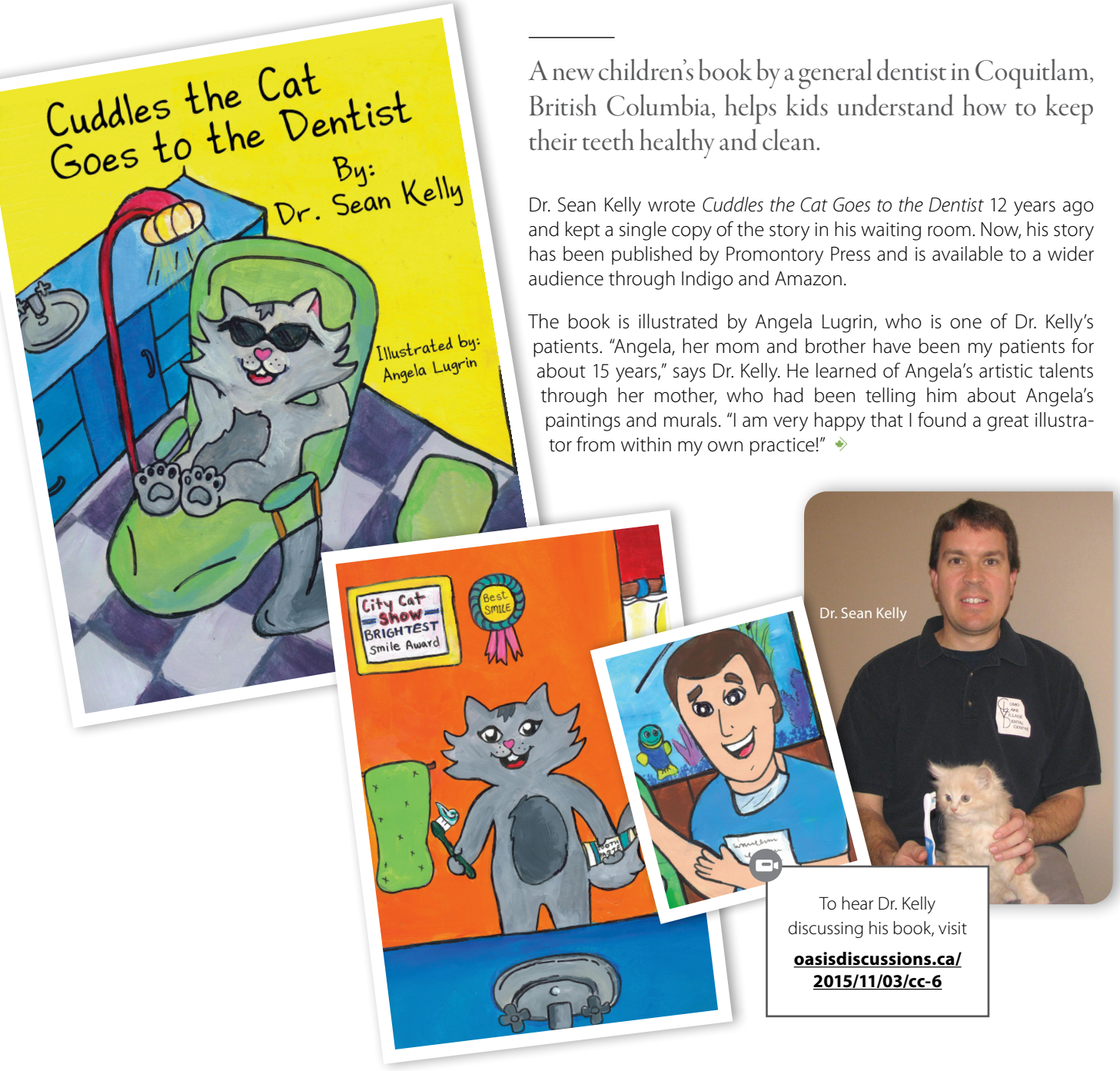
D11210

UNIVERSITY OF SASKATCHEWAN: Faculty Position, College of Dentistry. The College of Dentistry invites applications from qualified individuals for a full time tenure-track position in Operative Dentistry. The successful candidate will be required to deliver didactic, pre-clinical and clinical teaching; supervise student research projects; initiate, lead and participate in research activities; compete successfully for external funding to support this research program; and undertake relevant administrative activities including meetings and committee work. Applicants must possess a DDS/DMD or equivalent, MS degree or advanced clinical training in Operative/Restorative Dentistry. Evidence of collaborative academic achievements and documented experience in minimally invasive dentistry and modern caries management is also required. Preference will be given to candidates who possess a PhD in Dental Sciences or Cariology and a proven track record of research and academic accomplishments. Desired attributes include effective classroom teaching skills, mentorship abilities/skills and effective interpersonal and communication skills. Candidates must be licensed or eligible for an unencumbered license by the College of Dental Surgeons of Saskatchewan (CDSS) and are encouraged to familiarize themselves with Saskatchewan licensing requirements: http://www.saskdentists.com/saskatchewan-licensing-requirements.html. Candidates who are graduates from non-accredited dental training programs must achieve National Dental Examining Board of Canada certification (http://www.ndeb.ca/). Additional information can be found at the Canadian Information Centre for International Credentials: http://www.cicic.ca/professions/3113en.asp. Salary bands for this position are as follows: Assistant Professor - $93,293 - $112,109; Associate Professor - $112,109 - $130,925 and Professor $130,925 - $152,877. This position includes a comprehensive benefits package which includes a dental, health and extended vision care plan; pension plan, life insurance (compulsory and voluntary), academic long term disability, sick leave, travel insurance, death benefits, an employee assistance program, a professional expense allowance and a flexible health and wellness spending program. Interested candidates must submit a cover letter, a detailed curriculum vitae, a teaching dossier, a statement of research interests, samples of recent publications, three letters of reference, and proof of education including notarized, translated (English) copies of undergraduate and graduate degrees to: Dr. Gerry Uswak, Dean, College of Dentistry, 105 Wiggins Road, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 5E4. Telephone: (306) 966-5121, fax: (306) 966-5132, email: dentfacultysearch@usask.ca. Applications will be accepted and evaluated until the position is filled. Anticipated start date is July 1, 2016. Electronic submissions by email are preferred. The University of Saskatchewan thanks all applicants for their interest; however, only applicants selected for interviews will be contacted. The University of Saskatchewan is strongly committed to a diverse and inclusive workplace that empowers all employees to reach their full potential. All members of the university community share a responsibility for developing and maintaining an environment in which differences are valued and inclusiveness is practiced. The university welcomes applications from those who will contribute to the diversity of our community. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

D11288

Advertisers' Index

Cuddles the Cat
Goes to the Dentist



A new children's book by a general dentist in Coquitlam, British Columbia, helps kids understand how to keep their teeth healthy and clean.

Dr. Sean Kelly wrote *Cuddles the Cat Goes to the Dentist* 12 years ago and kept a single copy of the story in his waiting room. Now, his story has been published by Promontory Press and is available to a wider audience through Indigo and Amazon.

The book is illustrated by Angela Lugrin, who is one of Dr. Kelly's patients. "Angela, her mom and brother have been my patients for about 15 years," says Dr. Kelly. He learned of Angela's artistic talents through her mother, who had been telling him about Angela's paintings and murals. "I am very happy that I found a great illustrator from within my own practice!"

To hear Dr. Kelly discussing his book, visit **oasisdiscussions.ca/2015/11/03/cc-6**

> *I am very happy that I found a great illustrator from within my own practice!*

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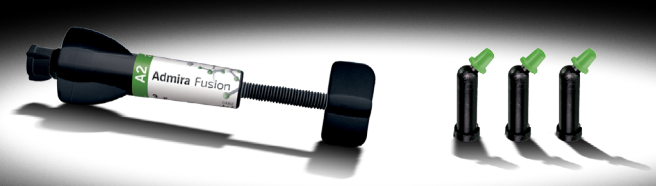

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