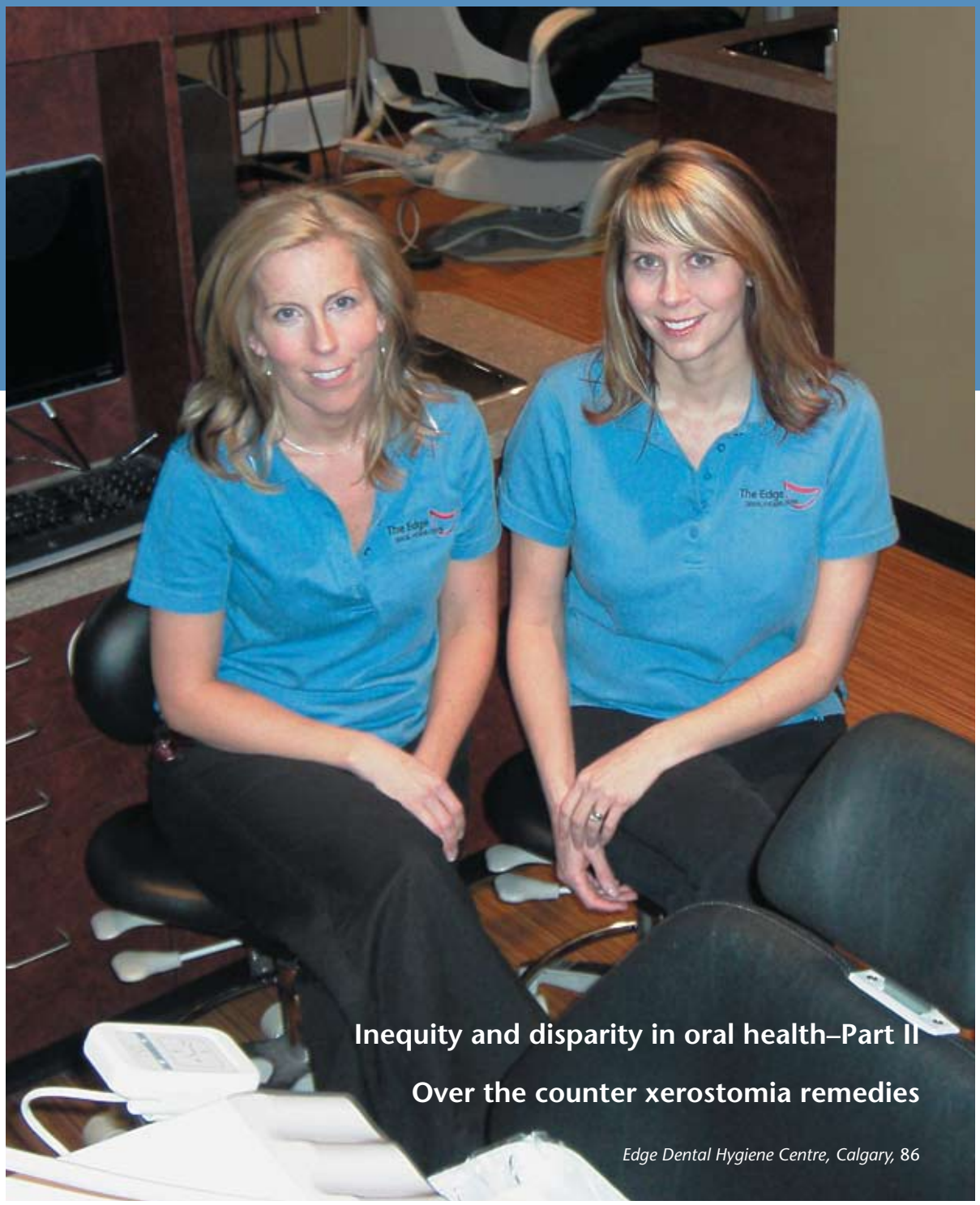
CANADIAN JOURNAL OF DENTAL HYGIENE · JOURNAL CANADIEN DE L'HYGIÈNE DENTAIRE

CJDH JCHD

CDHA ACHD

MARCH–APRIL 2009, VOL. 43, NO. 2



Inequity and disparity in oral health–Part II

Over the counter xerostomia remedies

Edge Dental Hygiene Centre, Calgary, 86

THE OFFICIAL JOURNAL OF THE CANADIAN DENTAL HYGIENISTS ASSOCIATION

A spring in your professional step

Wanda Fedora,
RDH

As you read this issue of our journal most of us are enjoying the early stages of spring; the time of year when Mother Nature is inspirational and when we feel that invigorating sense of all the possibilities that lie ahead. What has been dormant for the last six months is now enjoying a rebirth. This is a perfect time to look at our own possibilities in our lives and careers.

We tend to become dormant in one way or another. This spring may be a time to check and see if we have allowed ourselves to stay safe in a routine that accomplishes what needs to happen. It is so easy with all the demands on our time to avoid a change or challenge. But think of how it feels when we first dig into that soil to plant the new garden, or when we take a brisk walk in the spring air in a renewed attempt at exercising. Well, this can happen in our career too.

We can allow ourselves to stay stagnant in our approach to our clients, and even in our self development. We enhance our professional development when we take the time to read our journal, attend professional development courses, or research oral health items on the Internet. When we apply this to our career, we grow, and with that growth we feel the rush of enthusiasm spring brings. Exercising our body creates the action of healthy energy. Taking the proactive attitude to our professional life is like exercising our dental hygiene body.

We have all been influenced by people in our lives who have embraced a new idea. Whether it has been a fitness program, a diet, or other interests, their enthusiasm has inspired others, and even us, to join them in their activity. This can be true in your dental hygiene career. You grow and learn. Your positive energy becomes palpable and infectious, and inspires others to emulate you, just as your own interest was sparked when you were led by another's practising example. Those whose lives you touch will benefit from your new growth.

Many of your provincial associations will be hosting their annual meetings and conferences throughout the spring; allow yourself to attend and network with other dental hygienists. I hope you will take this opportunity to receive that boost of new energy, enhance your professional career, and put a spring in your professional step.

Wanda Fedora RDH.

CDHA welcomes your feedback: president@cdha.ca

Une vigueur printanière dans votre démarche professionnelle

Au moment où vous lisez notre journal, la plupart d'entre nous goûtons l'arrivée du printemps; ce temps de l'année où Dame Nature se fait inspirante et où de nouvelles perspectives nous revigorent. Ce qui dormait en nous depuis six mois renaît dans la joie. Il n'y a pas de meilleur moment pour examiner les possibilités personnelles que nous offrent notre vie et notre carrière.

Nous avons en fin de compte tendance à sommeiller. Le printemps est peut-être le moment propice de vérifier et de voir si nous avons préféré la sécurité d'une routine pour accomplir ce qu'il fallait faire. Face aux demandes de notre temps, c'est si facile d'éviter tout changement ou défi. Pensez cependant à ce qu'on peut ressentir quand on se met à creuser le sol pour y planter un jardin nouveau, ou qu'on se promène d'un bon pas dans l'air printanier pour se remettre à l'exercice. Hé bien, cela peut arriver aussi dans une carrière.

Nous pouvons nous permettre de stagner dans notre rapport avec la clientèle et même dans notre propre développement. Mais nous rehaussons notre développement professionnel quand nous prenons le temps de lire notre journal, suivons des cours de perfectionnement ou fouillons dans Internet des sites sur la santé buccale. Si nous appliquons tout cela à notre carrière, nous grandissons et cette croissance nous fait ressentir l'enthousiasme printanier. L'exercice physique donne de la vigueur à l'action énergétique. Une perception proactive de notre vie professionnelle en fera autant en faisant faire collectivement de l'exercice à notre organisme d'hygiène dentaire.

Nous avons toutes été influencées dans la vie par des gens qui avaient épousé des idées nouvelles. Portant sur un programme de conditionnement physique, un régime alimentaire ou tout autre sujet, leur enthousiasme a incité les autres, et même nous, à nous joindre à leur activité. Il peut en être ainsi de votre carrière d'hygiéniste dentaire. Vous grandissez et vous apprenez. Votre énergie positive devient palpable et contagieuse; elle incite les autres à vous imiter, tout comme l'exemple d'une autre praticienne a éveillé et stimulé votre intérêt. Celles que vous touchez dans leur vie bénéficieront de votre nouveau développement.

Plusieurs de vos associations provinciales tiennent leur congrès annuel et leurs conférences au printemps. Assurez-vous d'y participer et d'étendre votre réseau de collègues hygiénistes dentaires. J'ose croire que vous profiterez de l'occasion pour prendre un nouvel élan d'énergie, améliorer votre carrière et imprégner d'une vigueur printanière votre démarche professionnelle.

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A new era of responsibility

Dr. Susan Ziebarth

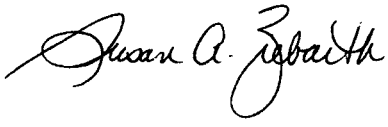
While you are reading this at some point after mid March, I am authoring it in the USA the morning after President Obama's inauguration. I have wondered about the many questions that are filling the news reports, and the answers that will have been revealed by the time these thoughts are in print. It is fascinating to observe the amazing mood of hope and support gripping the USA and the world as the President embarks on his first day of work. Change is often thought of as a negative; however the perception of change today is one of hope and openness. I felt it relevant to quote from President Obama's inaugural speech, "What is required of us now is a new era of responsibility." He urged his fellow Americans to seize their duties gladly.

His words apply to citizens globally on macro and micro levels. Think back to where you were during the inauguration; what were your thoughts then? Did you consider the global economic- and societal-tension issues that dominate the media? Did you also think of your profession and your career? The profession is gaining a public face that supports dental hygienists' roles as primary health care providers. What responsibilities do they carry for you?

The MacLeans magazine of 19 January 2009 carried a story on the lucrative business of dentistry. Whether or not it was a fair representation of the business of dentistry is a subject many could debate, and one that I will not engage in here. I mention the article because it emphasizes the public perceptions of dentistry, and reflects perceptions of responsibilities of oral health professionals. As you consider your profession and your scope of practice, do you consciously consider the responsibilities you have to your clients not just from a legal perspective but also from a spiritual perspective? As President Obama acknowledged if we seize our responsibilities gladly we can be, "Firm in the knowledge that there is nothing so satisfying to the spirit, so defining of our character, than giving our all to a difficult task".

CDHA embraces this spirit, and we have embarked on a major initiative to assist us in fulfilling our responsibilities to you, our members, so that we are from your perspective a proven resource in helping you meet your responsibilities within your profession. Watch for exciting changes through the coming year.

Warmest regards to you in the Oral Health Month.



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Une nouvelle ère de responsabilité

Ce que vous lisez à un certain moment après la mi-mars, je l'ai rédigé aux États-Unis, le lendemain matin de l'entrée en fonction du Président Obama. Je m'interrogeais alors sur les nombreuses questions que soulevaient les bulletins d'informations et sur les réponses qui auront été apportées au moment où ces lignes allaient être imprimées. C'est fascinant d'observer l'étonnant sentiment d'espoir et de soutien qui saisit les États-Unis et le monde au moment où le Président entreprend sa première journée de travail. Le changement est souvent perçu négativement; aujourd'hui cependant la perception en est une d'espoir et d'ouverture. Je trouve donc pertinent de citer cet extrait du discours inaugural du Président Obama : « Ce qui nous est demandé maintenant, c'est une nouvelle ère de responsabilité. » Il conseillait alors vivement ses concitoyennes et concitoyens américains de saisir leurs devoirs avec joie.

Son propos s'adresse aussi au monde entier aux niveaux macro et micro. Vous rappelez-vous où vous étiez au moment de l'inauguration; ce à quoi vous pensiez ? Pensiez-vous aux problèmes et aux tensions économiques et sociales qui priment les médias ? Pensiez-vous aussi à votre profession et à votre carrière ? Aux yeux du public, la profession paraît de plus en plus soutenir le rôle des hygiénistes dentaires en tant que fournisseures de soins de santé primaires. Quelles sont leurs responsabilités selon vous ?

La revue MacLeans du 19 janvier 2009 traite de l'exercice lucratif de la dentisterie. Qu'il s'agisse là d'une représentation juste ou pas de la profession dentaire, plusieurs pourraient en débattre. Je ne m'engage pas dans cette voie. Je mentionne cet article parce qu'il insiste sur les perceptions de la dentisterie qu'a le public et reflète les vues du monde sur les responsabilités des professionnelles en santé buccale. Si vous songez à votre profession et à l'étendue de votre pratique, considérez-vous vos responsabilités envers vos patients non seulement d'un point de vue juridique mais aussi dans le cadre d'une démarche de l'esprit ? Comme l'a fait le Président Obama, si nous reconnaissons joyeusement nos responsabilités, nous pourrons avoir « la certitude qu'il n'y a rien de plus satisfaisant pour l'esprit et déterminant pour notre caractère que de nous donner tout entier à une tâche difficile. »

L'ACHD partage cet état d'esprit. Nous nous sommes engagées dans une grande initiative visant à nous aider à assumer nos responsabilités envers vous, nos membres, afin que, dans votre perspective, nous soyons une ressource qui aura fait ses preuves en vous aidant à assumer vos responsabilités au sein de votre profession. Surveillez les changements palpitants des prochaines années.

Cordialement vôtre en ce Mois de la santé buccale.

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'Letters to the editor' is a forum for expressing individual opinions and experiences of interest that relate to the dental hygiene profession and that would benefit our dental hygiene readership. These letters are not any reflection or endorsement of CDHA or of the journal's policies. Send your letters to: journal@cdha.ca

Editor:

What in the world is happening to Dental Hygiene education in Canada?

Last fall I presented at the International Conference on Dental Hygiene in Seoul, South Korea, sponsored by the Korean Dental Hygienists Association (KDHA) and attended by delegates from Japan, Korea, Singapore and elsewhere. The theme of the conference was Oral Care for the Older Adult.[1,2] My hosts told me that there were over 1500 scientific, research based, poster presentation submissions that had to be screened down to 150. Every dental hygiene student in South Korea learns the research process including the use of specialized computer analysis programs. It was one of the most inspiring dental hygiene conferences I have attended in my 35-year career.

Entry to practice education in South Korea, Finland, Japan, Singapore and many other countries has increased in depth, scope, and length. I toured dental hygiene programs at the Suwon Science College and at Namseoul University. South Korean dental hygiene education has improved due to increasing technology, more complex population oral health needs, globalization and a worldwide trend towards the acquisition of core interprofessional health care competencies.[1,2]

The 2001 USA Institute of Medicine (IOM) Summit report,[3] *Crossing the Quality Chasm: A New Health System for the 21st Century*, recommended an interdisciplinary reform of health professions education in order to enhance patient care quality and safety. The follow-up report focused on integrating a core set of competencies—patient centred care, interdisciplinary teams, evidence based practice, quality improvement, and informatics—into education, accreditation, and credentialing processes across the health professions. The goal is an outcome based education system that better prepares clinicians to meet the needs of patients and the requirements of a changing health system.[3]

In Canada, nursing, physiotherapy, occupational therapy, midwifery and others with whom we once shared university classrooms have integrated these core interprofessional competencies into education and practice resulting in improved entry to practice education and credentials to baccalaureate and master levels, and doctorate for teaching.

South Korea, in 2008, had 22,000 registered dental hygienists (RDH) for a population of 48,379,392 persons. South Korea has 52 three-year diploma dental hygiene programs based upon a robust core curriculum rigorously populated in the behavioural and medical/dental sciences. There are also 9 four-year degree programs nationwide to a total of 61 dental hygiene programs. The South Korean education system results in a strong culture of research and innovation among their dental hygienists.[1,2]

Statistics Canada, in 2001, noted approximately 14,876 registered dental hygienists in a population of 33,850,844 persons.[4] Canada has 3 baccalaureate programs and 18 three-year dental hygiene diploma programs.[5]

By far the fastest growing education model in Canada includes approximately 36 diploma programs of 18–20 months duration with no post secondary requisite courses at admission.[5] Are we modelling our 21st century dental hygiene education on 20th century adult education models, and if so why?

Our profession must become more attentive to improving and coordinating its entry to practice education and credential nationally or I believe we will continue to fall behind globally. We must assure there are core competencies and measurable education benchmarks that reflect 21st century abilities as the basis for program review.

I know that the answers to "What in the world is happening to Dental Hygiene education in Canada?" are complex, perhaps irreversible, yet we must continue to look out globally and envision holistically within the context of all healthcare professions. Finally we must continue to ask those critical questions, and take the time to dissent in order to improve our profession and go forward. Education is the hallmark of a profession and cannot be ignored.

There cannot be reform without awareness, advocacy and action. This is a call to action to support, participate and execute a robust national dental hygiene education and research agenda.

Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family. Kofi Annan

Respectfully,
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Dear Editor:

Delivering oral health care in Venezuela: KIA and its mission

I am a member volunteer with Kindness In Action (KIA), a non profit charitable organization that carries out dental missions in developing countries. Volunteers deliver pain

Figure 1. One more oral health mission accomplished—happy clients with their health care volunteers in Venezuela.

relief, give dental health education, bring joy, and leave hope behind. The silver thread binding all KIA volunteers is the belief in the dignity of all people, and the right to such basic human services as dental and oral care.

Our clients travelled from a small village three hours from Barquisimeto to attend our improvised dental clinic at a boarding school. They came in a tightly packed livestock truck (figure 1). Our program is organized by a local contact at each location where KIA will be working. The contact is either an NGO (non government organization), a missionary group, or an interested contact. The local contact person is in communication with Dr. Amil Shapka, El Presidente of KIA, and the team leader of that particular group. Together, a decision is made as to:

- where the team will work: school, boarding school, church, community hall, indoors or outdoors
- which group of people will receive our services: locals, poor, middle class, people of the surrounding villages or mountains, school children …

The contact person using word of mouth, posters, and personal connections has a crowd waiting for us on our arrival at each location. It is not uncommon to have one hundred people lined up.

KIA has been operating over fifteen years. Volunteers pay their own way which includes air fare, accommodation (local hotels), transfers, and some meals. Dental missions generally last a week. Dentists, dental assistants, dental hygienists, translators, and other health care professionals are welcome. Try a new experience, and share your dental skills. For more information go to: http://www.kindnessinaction.com

Extractions, simple fillings and basic dental cleanings are the choice of treatments available in a KIA dental mission. I believe basic tooth brushing is fundamental to good oral health. Filling and drilling, and extractions are a quick solution to their current dental problems. However, only through basic, repetitive dental health education will the huge dental decay problems and tobacco usage shrink.

Dental missions are an eye opener to first time KIA volunteers. Often during the tooth brush-ins, a child would look up, and not know what to do with the toothbrush placed in her hand. This shocked the volunteers.

Now when I watch my local child "professors" teach their peers a flawless interactive tooth brush-in, I feel great satisfaction, as when local volunteers from the community are able to successfully apply fluoride varnish to a line up of fifty Grade 1 students. With confidence, I can leave the fluoride varnish and supplies behind, and these empowered women volunteers can go to the many villages and treat the children. KIA prides itself in sowing the seeds of self sufficiency.

Oral Health Month is truly an important time whether in Canada or elsewhere in the world. I know "working for free" and "sharing the basics of dental hygiene" bring purpose to my life.

Donna Kittle, RDH, BSc
Calgary, AB
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Editor:

14 February: *Gift from the heart* story

I could not let this very rewarding day pass without telling you how it all went. I volunteered to conduct an oral cancer screening with advanced technology and bacteria screening with the microscope to determine if my clients were at risk for periodontal disease. I wanted to help people discover how to become healthier by knowing what is occurring in their mouths as well as in their bloodstream.

I thank my colleague, Bev Woods, for engineering this day. A former student of mine from Maxwell College, Sonia, was more than willing to volunteer her time to assist me on that special day. Together we supported the clients by taking their blood pressures, screening for oral cancer using the VELscope and providing them with a microscopic view of their subgingival plaque.

All clients were ecstatic for what they learned about their oral health, shook our hands at the end, and wanted appointments to have calculus removed. I promised them a complimentary slide check to assess if what they did on their own for their oral health made a difference.

75-year old woman touched my heart as I believe I touched hers. She reported that her doctor had indicated that she had uncontrolled type 2 diabetes. She sat down and said, "I just need some advice, my mouth is very uncomfortable; I am in pain." She had spoken to her medical doctor about this oral condition but no one offered any suggestions or help.

After viewing the slide, she saw for herself what she needed to do to initiate some health care on her own. She was speechless as we walked out together. With tears in her eyes, she said "I want to hug you". We hugged, and she was shaking as she sobbed in my arms. She did not have to say another word… . I knew then that we had given her some hope, that someone truly cared about what she was going through, and that we had "touched her heart". A *Gift from the Heart*—what a truly satisfying Valentine's Day gift we were able to provide! Thank you to all those independent dental hygienists around Ontario who volunteered their

…continued on page 86

A healthier mouth for a healthier you!

ORAL HEALTH AND BRUSHING, FLOSSING AND RINSING

PERIODONTAL DISEASE MAY BE LINKED TO SOME **LIFE-THREATENING ILLNESSES.** YOU CAN TAKE STEPS TO **REDUCE YOUR RISK.**

Dental hygienists: Your partners in oral and overall health

THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

YOUR MOUTH: A PORTAL TO YOUR BODY.

The results of an ineffective dental hygiene routine can be much worse than tooth loss—it can also have an effect on overall health.

Unchecked plaque on your teeth can result in gingivitis, periodontal disease and tooth decay. Increasingly, a direct connection is being drawn between periodontal disease and life-threatening illnesses such as lung disease, heart disease and stroke, and diabetes.

But you *can* do something about it. Periodontal disease can be prevented or controlled through regular brushing—with either a manual or powered brush—flossing and rinsing.

A dental hygienist can develop an oral health program that will suit your individual needs and preferences. Don't wait another minute. Make an appointment with your dental hygienist today.

YOUR DENTAL HYGIENIST CAN HELP!

Your dental hygienist is a licensed oral health-care professional. Together, you can develop a program of good oral hygiene.

A VISIT TO YOUR DENTAL HYGIENIST CAN HELP ENSURE A LIFETIME OF HEALTHY GUMS AND TEETH.

Your dental hygienist will assess your health history, examine your head and neck, and check your mouth, gums and teeth. If necessary, your dental hygienist may refer you to other health-care providers.

You can't afford to wait—why not make an appointment today?

5 EASY STEPS TO GOOD ORAL HEALTH

It takes just a few minutes a day to help ensure good oral health. Here are five things you can do to enjoy healthy gums and teeth.

1. BRUSH YOUR TEETH DAILY.
   If you use a power toothbrush, choose one that offers rotation/oscillation action.
2. FLOSS DAILY BETWEEN YOUR TEETH TO REMOVE DENTAL PLAQUE.
   You can use floss on its own or in a holder or flosser. Interdental brushes, picks or irrigators can be used under bridges and around braces.
3. RINSE USING AN ANTISEPTIC MOUTHWASH.
   This may help reduce the accumulation of dental plaque. Mouth rinses with a fixed combination of these essential oils such as thymol, eucalyptol and menthol have been shown to reduce plaque accumulation and gingivitis.
4. MAKE HEALTHY FOOD CHOICES.
   Nutritional food choices low in sugar are good for your overall health and your oral health.
5. GET REGULAR PROFESSIONAL DENTAL HYGIENE CARE.
   Your biggest weapon in the battle to maintain good oral health is a regular visit with your dental hygienist. Why not make an appointment today?

MAKE THE CALL NOW!

Brush, floss, rinse and eat healthy foods. Every day.

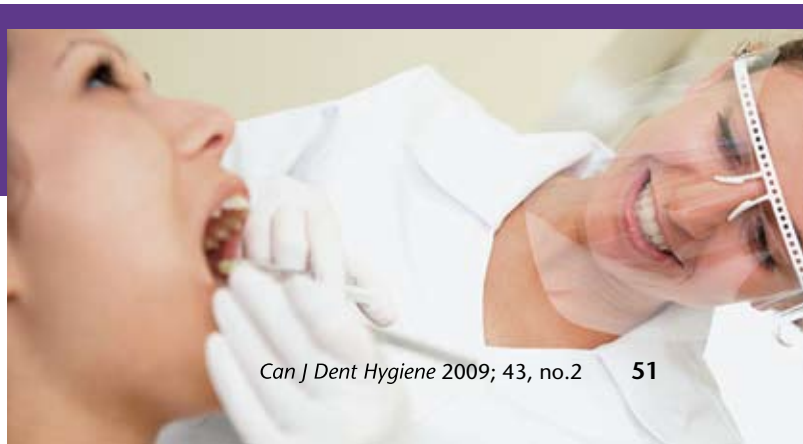
And, most of all, visit your dental hygienist regularly. That visit may be the start of a lifetime of good oral health.

Why not take a minute *right now* to make an appointment to see your dental hygienist?

You'll be smiling all the way to a healthier future.

Many Canadians suffer from gingivitis—inflammation of the gums caused by dental plaque build-up. Yet, only a few think it affects them.

Since periodontal disease can be prevented and controlled, **dental hygienists** have the expertise to play a key role in decreasing both its rate of incidence and severity.



Une bouche en santé, c'est un corps en santé!

LA SANTÉ BUCCODENTAIRE ET LE BROSSAGE DES DENTS, L'UTILISATION DE LA SOIE DENTAIRE ET LE RINÇAGE DE LA BOUCHE

IL PEUT Y AVOIR UN LIEN ENTRE LA **MALADIE PARADONTALE** ET CERTAINES **MALADIES GRAVES**. VOUS POUVEZ PRENDRE DES MESURES POUR **RÉDUIRE VOTRE RISQUE**.

Les hygiénistes dentaires: vos partenires pour le maintien d'une bonne santé

THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

VOTRE BOUCHE : UNE VOIE D'ACCÈS À VOTRE CORPS.

De mauvaises habitudes d'hygiène buccale peuvent avoir des conséquences beaucoup plus graves que la perte des dents — en effet, elles peuvent aussi avoir un effet sur votre santé en général.

La plaque dentaire non maîtrisée peut causer la gingivite, la maladie parodontale et la carie dentaire. De plus en plus, on établit un lien direct entre la maladie parodontale et les maladies graves comme les maladies pulmonaires, les maladies du cœur, les accidents vasculaires cérébraux et le diabète.

Mais vous *pouvez* faire quelque chose à cet égard. En effet, la maladie parodontale peut être prévenue ou traitée par le brossage régulier (avec une brosse manuelle ou électrique), l'utilisation de la soie dentaire et le rinçage de la bouche.

Votre hygiéniste dentaire peut élaborer un programme de santé buccodentaire qui répondra à vos besoins et préférences individuels. N'attendez pas une minute de plus. Prenez rendez-vous avec votre hygiéniste dentaire dès aujourd'hui.

VOTRE HYGIÉNISTE DENTAIRE PEUT VOUS AIDER!

Votre hygiéniste dentaire est un professionnel autorisé en soins de santé buccodentaire. Ensemble, vous pouvez élaborer un programme d'hygiène buccale.

UNE CONSULTATION AVEC VOTRE HYGIÉNISTE DENTAIRE PEUT VOUS AIDER À GARDER DES GENCIVES ET DES DENTS SAINES POUR LA VIE.

L'hygiéniste dentaire évaluera vos antécédents médicaux, vous examinera la tête et le cou et vérifiera votre bouche, vos gencives et vos dents. Au besoin, votre hygiéniste dentaire pourra vous diriger vers d'autres fournisseurs de santé.

N'attendez plus : prenez rendez-vous dès aujourd'hui!

LA SANTÉ BUCCODENTAIRE EN CINQ ÉTAPES FACILES

Quelques minutes par jour suffisent pour vous aider à maintenir une bonne santé buccodentaire. Voici cinq choses que vous pouvez faire pour que vos gencives et vos dents restent saines.

1. BROSSEZ-VOUS LES DENTS TOUS LES JOURS.
   Si vous utilisez une brosse à dents électrique, choisissez-en une qui offre un mouvement rotatif oscillatoire.
2. UTILISEZ LA SOIE DENTAIRE QUOTIDIENNEMENT POUR ENLEVER LA PLAQUE DENTAIRE.
   Vous pouvez utiliser la soie dentaire, seule ou avec un enfileur pour soie dentaire ou un porte-soie dentaire. Vous pouvez également utiliser des brosses interdentaires, des cure-dents ou des irrigateurs buccaux sous les ponts et autour des appareils orthodontiques.
3. UTILISEZ UN RINCE-BOUCHE ANTISEPTIQUE.
   Il vous aidera à réduire l'accumulation de plaque dentaire. Grâce aux rince-bouche qui comprennent une combinaison fixe d'huiles essentielles comme le thymol, l'eucalyptol et le menthol, il est possible de réduire l'accumulation de la plaque dentaire et de la gingivite.
4. CHOISISSEZ DES ALIMENTS SAINS.
   Les aliments faibles en sucre sont bons pour la santé globale et pour la santé buccodentaire.
5. CONSULTEZ VOTRE HYGIÉNISTE DENTAIRE RÉGULIÈREMENT.
   Votre meilleure alliée dans la lutte pour le maintien d'une bonne santé buccodentaire est une consultation régulière avec votre hygiéniste dentaire. Pourquoi ne pas prendre rendez-vous aujourd'hui même?

APPELEZ MAINTENANT!

Brossez-vous les dents, passez la soie dentaire, rincez-vous la bouche et mangez des aliments sains. Chaque jour.

Et, avant tout, consultez régulièrement votre hygiéniste dentaire. Cette consultation pourrait signifier le début d'une bonne santé buccale pour la vie.

Pourquoi ne pas prendre une minute *maintenant* pour prendre rendez-vous avec votre hygiéniste dentaire?

Un avenir en santé vous sourira.

Beaucoup de Canadiens et de Canadiennes souffrent de la gingivite, une inflammation des gencives provoquées par l'accumulation de plaque dentaire. Pourtant, peu se sentent concernés.

Puisqu'on peut prévenir ou traiter la maladie parodontale, les **hygiénistes dentaires** ont les compétences voulues pour contribuer à diminuer son incidence ainsi que sa gravité.

Inequity and disparity in oral health—Part II. Socio-economic status and deprivation: can dental hygiene diminish the impact?

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ABSTRACT

According to various oral health outcome measures, steady improvements over the previous century have resulted in Canadians being among those with the greatest oral health status in the world. Paradoxically, the socio-economically disadvantaged have not realized the same substantial improvements in their oral health status as the more advantaged, with the former demonstrating poorer oral health. These disparities, evident in overall health as well, reflect complex issues and require sophisticated, multidimensional strategies to mitigate them.

Part I of this paper, published in volume 42.6 (November–December 2008), provided a summary of the literature about the various oral health status measures used to assess these varying disparities between Canadian social groups. This part of the paper will provide a description of various exposure variables that contribute to the outcome disparities discussed in Part I, and will begin to explore the potential impact the dental hygiene profession can make in reducing the oral health disparities between less advantaged and more advantaged Canadians.

RÉSUMÉ

Selon diverses mesures de l'état de santé buccale, les améliorations constantes survenues au cours des derniers siècles ont eu pour résultat que le Canada se situe parmi les pays dont la population a le meilleur état de santé buccale. Paradoxalement, les défavorisés socio-économiques n'ont pas atteint les améliorations substantielles obtenues par les plus favorisés, leur état de santé buccale étant plus pauvre. Ces disparités, qu'on retrouve dans l'état de santé générale, reflètent des problèmes complexes et indiquent qu'il faut trouver les stratégies raffinées et multidimensionnelles pour les atténuer.

La 1re partie de cet article, publiée dans le numéro 42.6 du journal, a présenté un résumé de la littérature sur les diverses mesures de l'état de santé buccale qui ont servi à évaluer les disparités entre les groupes sociaux du Canada. La présente partie décrit les diverses variables d'exposition qui contribuent aux disparités examinées dans la 1er partie et commence à explorer les possibilités d'impact que la profession d'hygiène dentaire peut exercer pour réduire les disparités en santé buccale entre les éléments défavorisés et favorisés de la population canadienne.

Key words: oral health, inequities, disparities, dental hygiene, care

BACKGROUND

The Canadian Dental Hygienists Association (CDHA) asserts that all Canadians should be entitled to receive comprehensive oral health care. Dental hygiene has the potential to make a substantial impact in assuaging oral health inequities through improving access to oral health care by broadening delivery models. Such improvements will require continued reductions in legislative barriers followed by a commitment from the dental hygiene profession to pioneer innovative dental hygiene care delivery models. These changes will require a clear knowledge of the existing oral health inequities in order to determine which of these present opportunities for dental hygiene interventions. Then dental hygiene professional organizations, educators, researchers, and regulatory bodies must collectively explore, organize, direct, and then support dental hygiene providers in developing and implementing appropriate oral health programming.

If dental hygiene fails to direct its course towards diminishing oral health disparities, it runs the risk of losing its relevance to the health and well being of Canadians. Dental hygiene is well situated to make an important contribution to this end, but it will require an ideological shift and major commitment from the profession. Only then will dental hygiene realize a recognized position within health care.

INTRODUCTION

In Canada, some sub population groups demonstrate variation in their oral health status with the less advantaged exhibiting poorer oral health than others due to numerous forces.[1,2] These disparities have become increasingly glaring and one important cause is the inequities in how oral health care is delivered.[3] Unlike the Canadian health care system, the oral health care delivery model virtually ensures disparities in oral health status between the most advantaged and most disadvantaged population groups because of an overall lack of care, and care that does not respond well to the unique needs of less advantaged individuals.

CDHA has highlighted various failures that exist in the current oral health system, and the dental hygiene profession has officially recommended changes to how oral care is delivered asserting that these changes will help mitigate oral health needs and the inequitable distribution of oral health care.[4] CDHA asserts that it has historically been largely prevented from making an impact on the oral health status of the underserved due to various structural factors, some of which will be discussed in this paper.[4]

Part I of this paper provided a summarization of the literature surrounding various measures that are used for assessing the oral health status of the population.[5] Part II will, first, discuss the various exposure variables that operate as contributing factors and causal forces to the variation displayed in these outcome measures in relation to socio-economic status and other disadvantages. Second, the paper will provide an introduction exploring the potential impact of the dental hygiene profession for diminishing oral health inequities including a short examination of the

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limitations of the current approach to the delivery of oral health care in Canada.

Material and Methods (Parts I and II)

A literature search was conducted in the fall of 2008 of the MedLine data base from 1963 to December 2008, and on Google Scholar using the following key words and their combinations: oral health, status, inequities, disparities, dental hygiene, care, Canadian. Of the articles generated by the initial search, based on titles and abstracts, 65 were retrieved in full text. Utilizing these references and also searching key authors in this field of inquiry additional papers were examined. This search is not to be considered exhaustive.

Results

Inequitable provision of oral health care, due to both economic and social forces,[6] can result in disparities in oral health status. Surveys conducted in the UK from the late 1980s to the early 1990s that measured social class in relation to oral health attributed differences observed between groups as being due to material resources (absolute) or social status (relative) factors and culturally related patterns of behaviour.[1] More recently in health and oral health literature, the relative response of social status has been increasingly recognized in addition to absolute resources and behavioural conditions for explaining health outcomes.[2]

The range observed in oral health status, known as the oral health gradient, has been examined to determine if it is linear meaning, decreases in health status occur evenly across the full range, or if there is a threshold effect with a deterioration in status occurring at a specific critical level.[2] For example, Sanders and co workers found that with Australian middle aged adults the influence of one's relative social standing had a more linear relationship while the material resources relationship showed a threshold effect.[2] The results suggest that absolute material resources benefit oral health mostly at the lower end of the socio-economic distribution while one's relative social standing appears to be more important to oral health status at the more advantaged tail. The study found oral health behaviours poorly explained disparities in oral conditions, and attempts to modify personal behaviours steepened the slope in the oral health status gradient as the more advantaged groups tended to adopt positive health behaviours more readily.[2]

In the US, a coalition for oral health has identified several groups that deal with inequitable access issues including the working poor, special needs children, developmentally disabled, long term care (LTC) residents, and middle class who have lost their jobs.[7] Single parent families increasingly fall under poverty lines along with older adults on restricted incomes.[7]

DISADVANTAGED GROUPS

The elderly

Of all of the groups that have a collective disadvantage in regard to their oral health, the elderly appear to have been the most empirically examined, and this will be important in that the proportion of elderly in Canada is expected to increase.[8,9] While the elderly have some commonalities, they are becoming increasingly diverse and fall into several sub groups of their own.[8,10,11] Some factors contributing to the elderly cohort's oral health status are the loss of work related dental insurance, diminishing somatic and mental ability, restricted income, lack of transportation and mobility, institutionalization and complicated medical conditions. As people age, the ability to perform oral self care deteriorates due to both cognitive and physical limitations.[11]

It has been shown that the dentate elderly suffer from considerable unmet treatment needs.[12] Even the healthy elderly have been shown to be orally compromised with approximately a third of this group reporting problems with chewing, pain, social problems, oral health worries, and overall dissatisfaction.[13] Close to 70 per cent of older, independent elderly in one study reported having symptoms in the preceding four-week period.[13] The elderly, particularly those institutionalized, consistently demonstrate poor oral hygiene levels with both their natural and prosthetic teeth.[8,9] It has been shown LTC residents do not receive assistance with their oral hygiene and have poor oral hygiene that worsens with the level of dependence.[11]

Aging individuals' oral condition changes physiologically. It has been reported that at least 120 medical conditions associated with aging can induce xerostomia either directly or through accompanying medications, and have a significant impact on caries experience and oral comfort.[10,11,14] In a sample of LTC elderly residents, it was found that there was a mean 3.3 medical conditions per resident with an average 5.3 medications, many of which have xerostomic affects.[14]

In Canada, there is a relatively high level of institutionalization,[15] and institutionalized seniors are typically more frail, lack mobility and are overall particularly disadvantaged.[7] These individuals typically have more involved medical histories complicating the delivery of oral health care.[14] Most LTC facilities rely on off site dental care for residents,[8,14] and where treatment needs are identified within institutions, services would typically be sought out through traditional methods, meaning private fee for service care. It is not common for these facilities to have the personnel, equipment or space to accommodate the provision of dental care.[8,16] Institutionalized seniors may be decreasingly responsible for their own care, and a lack of their family, administrative staff or nursing staff's attention to their oral health needs may result in inadvertent barriers to receiving necessary care.[8]

Elderly LTC residents typically demonstrate high levels of need. Wyatt[17] found almost 80 per cent of LTC residents in his Vancouver study having caries, while levels of 50%–80% being typical in other studies. It was concluded that the combination of poor oral hygiene, high sugar intake, and xerostomic oral conditions left the residents in a high risk situation that had not been circumvented due to barriers to oral health care including the cost of treatment, lack of perceived need by residents, transportation to dental facilities and fear.[11,17]

The elderly demonstrate diminishing utilization of oral health care services,[3,18] and this is particularly pronounced for minority, lower income, poorly educated seniors, and those not having dental insurance.[8,19,20] Surveys and insurance data consistently have shown that older Canadians typically do not have private dental insurance cover-

age, and that they receive less dental care.[19,20] In a 1970's Canadian survey, it was found that over three quarters of Canadians over 65 did not see a dentist within the previous year, and for most of these, it had been more than five years.[18] Almost 90 per cent were found to require dental care.[18] In the minority that did seek out dental care, it was overwhelmingly for acute symptom relief.[18] Since then, more recent surveys and insurance data substantiate that the amount of care increases with dental insurance, and that probability of insurance coverage decreases dramatically at age 65 when employer sponsored health benefits typically cease.[19,20] In the 1996–1997 National Population Health Survey, only 21 per cent of respondents had dental insurance compared to 64 per cent for those between 35 and 44 years of age.[20] Of treatment that is sought out by older adults, preventive care is the least utilized.[8,18,20] Some estimations report that only 25 per cent of seniors receive preventive care, and this proportion decreases with age.[8]

Interestingly, for the independent elderly, the most common reason reported for not seeking out dental care is a lack of perceived need, and secondary to this was the high cost of care, transportation issues, and fear.[8,18] Many studies have shown a discrepancy between perceived oral health needs and actual treatment needs.[16] In Kandelman's early 1990's Quebec study[16] the mean cost of oral treatment needs was $720.00 per study subject, and this rose dramatically when the edentulous subjects were excluded. It is likely that as more seniors retain their teeth unmet treatment needs will increase.

While in a more recent study[9] with Albertan independently living elderly, less severe outcomes were assessed, it had been a mean of three years since the subjects' last dental visit and 26 per cent were edentulous and almost 70 per cent required dental treatment. There were considerable prosthetic concerns, and gingival and periodontal needs as evidenced by poor oral hygiene, the presence of calculus, bleeding gingiva, inflammation, and more severe periodontal conditions.[9] Over one half of the study sample were recognized as needing prophylaxis.[9] At the time of the study, dental care in Alberta was government subsidized for those 65 years of age and older,[9] but only 38 per cent were taking advantage of the program.[9] The reasons cited for the substantial unmet needs and under utilization were a lack of perceived need along with mobility and access issues, fear and finally, some concern surrounding costs still remained despite the subsidization.[9]

Seniors have the lowest proportion of their total oral health care costs reimbursed by private dental insurance and have the highest out of pocket expenditures.[8] Low income individuals not fortunate enough to have dental insurance have been shown to be the least likely to have had a dental visit within the previous year demonstrating the inverse care law.[21] In an Ontario study, more than half of institutionalized seniors had no dental insurance coverage, and those considered very old (>75) and had the lowest incomes were most vulnerable having no program in place to support their care.[21] When economic barriers are removed, oral health care has been shown to more closely approximate actual need, and greater utilization rates are seen more with affluent groups.[3] Leake[3] observed that the discrepancy in utilization rates between the affluent and disadvantaged groups, which was well pronounced in the late 1950s, was considerably assuaged by 1990s, but has since declined to earlier levels.

First Nations populations

In Canada, the experiences of remotely located population groups impact their ability to acquire or maintain a healthy oral state. Access to services is geographically restricted affecting both the volume and scope of services received.[22] An outcome is that First Nations populations have a higher prevalence of oral health problems.[7] For example, First Nations Canadian children experience three times the caries rate of other Canadian children and, tragically, this results in many of these individuals having lost their teeth by young adulthood.[7]

Because the history of health service experience did not begin for Inuit populations until the 1960s and later yet for oral health care, dental care is relatively new and not a part of traditional lifestyle.[23,24] In a study examining the oral health of an elderly cohort of traditional Inuit, 65 per cent of subjects were dentate and had an average of almost three decayed teeth.[24] Plaque was found on almost all surfaces in almost the entire sample and correspondingly high levels (40%) presenting with bleeding gingiva, periodontal pocketing (85%), and caries (66%).[23,24] These findings have been found to be higher than that of similarly independently living Manitobans in more southern regions.[24] Of the edentulous Inuit, denture retention was poor.[24] Close to 45 per cent of the study subjects had soft tissue lesions which were relatively compared to other population groups, non denture related.[24]

Of the elderly Artic Inuit, an extremely high level of missing teeth and low prosthetic replacement exist.[23,24] While a lack of access to dental care contributes to this, the feasibility of the Inuit to accommodate dentures is questionable given the high masticatory forces necessary for a traditional diet.[23] However, if Inuit lifestyle continues to become less traditional, their treatment demands will also likely evolve.

First Nations Canadian children demonstrate a disproportionately high proportion of malocclusion.[25] In one study, severely handicapping malocclusion was found in almost 40 per cent of the First Nations group compared to only about 14 per cent in other Canadian children.[25] A contributing factor to this discrepancy is likely the very high levels of caries and early childhood caries (ECC) found in First Nations population groups resulting in a loss of dental arch length and subsequent crowding of the teeth among other alignment problems.[25] Furthermore, far fewer First Nations children receive orthodontic corrective treatment.[25] The ability to access specialized and ongoing LTC from orthodontists is not viable for remotely located children and adolescents;[25] thus, the prevention of orthodontic cases through caries reductions is the ideal strategy.

New Canadians

New Canadians immigrating from across the globe present with diverse oral health needs and troubling oral health status. While the literature surrounding new Canadians' oral health status is limited, immigrants to Canada have been shown to be twice as likely to have lost their

teeth as their Canadian born counterparts.[26] Studies comparing foreign born with Canadian born adolescents have shown the former to have inferior oral health status with poorer oral hygiene, more decay and greater oral health service needs.[27] However the disproportion was less pronounced the longer the study subject lived in Canada.[27] Locker and colleagues[27] attributed this improvement to a longer exposure to Canadian preventive programs and dental services and also an improvement in socio-economic status and upward mobility of immigrant families. Unfortunately, provincial children programs often end in early adolescence concomitant with decreases in utilization rates of oral health services.[27]

DIMINISHING THE DISPARITY—CAN DENTAL HYGIENE MAKE AN IMPACT?

Oral Health Care System

Access has been defined as "the ability of an individual to obtain any service, and the capacity of the system to match the patient's needs and preference with the appropriate level of services."[8] Overall, dental expenditures are increasing, and many Canadians enjoy exceptional oral health status. From the 1960s to 2000, there was a six fold increase in total dental expenditures in Canada.[3] Clearly, the system is providing services that result in oral health, but this has not occurred equitably across all sub population groups. In reflecting on the inequitable distribution of oral health care and resulting oral health disparities discussed previously, access remains a problem in oral health care delivery for some population groups in Canada, and may be increasing.

The oral health care delivery system in Canada, unlike medical care, is predominantly privately funded within a multipayer scheme leaving many Canadians entirely out of the system.[3] Oral health care is also predominantly privately delivered within private dental practices utilizing a fee for service model.[3,6] While up to the 1990s some effective publicly funded and delivered oral health programs existed in Canada, the 1990s saw substantial reductions in public spending on several public programs including the outright cancellation of children's programs in Manitoba, Saskatchewan and British Columbia and significant reductions in Newfoundland children's program and Alberta seniors' program.[3] Since then, public spending has not completely recovered, and the recent economic downturn will likely exacerbate public funding programs.

In Canada, oral health care now almost completely relies on private dental insurance provided as a work related benefit within a system largely resembling US health care prior to the wide implementation of Health Maintenance Organizations (HMO).[3,21] Prior to the 1970s, less than 1 per cent of Ontarians had dental insurance compared to almost 45 per cent by 1979.[28] Like the pre-HMO health care system in the US, dental insurance in Canada is not believed to be sustainable in that it promotes the provision of more and more expensive services, and the patient has minimal if any reason to question the appropriateness or value of care.[3] In the late 1980s the trend in increasing dental coverage began to wane in the US,[8] and this similarly occurred a little later in Canada.

While those with dental insurance do have better utilization rates,[21] because these plans are linked to one's occupation, they often cease at retirement or job loss,[28] which is when one's income concomitantly decreases substantially. Financing of dental care through private dental insurance is also recognized as being inequitable in that it is not subject to either federal or provincial tax (except in Quebec) and thus presents a "tax break" to insured working, more affluent population groups, while the uninsured use after tax dollars to finance their oral health care to a defined limit.[3] Reductions of dental insurance coverage are increasing,[7] and those situated lower in the oral health gradient will likely feel more of the negative impact while the more affluent will maintain resources necessary to sustain their current utilization patterns.[28] Private dental insurance has helped increase the oral health of many Canadians, but it has not benefited everyone, and will likely do so for a diminishing proportion of the population.

Policy change

The philosophical underpinning of each oral health care profession is central in various ways in that its ideals influence the collective decisions that are made by that profession, and will either perpetuate the status quo or stimulate changes to it. Leake states that professions can "…move along a track…toward the market-driven technology-based provider of expensive elective services to those who can afford them", but warns that those professions that do, should be cognizant that this path would likely incite a "renegotiation of the social contract" between dentistry and society.[3] This renegotiation may already be noticeable in the changes that have occurred in legislation, and permitted alternatives to the provision of oral health services previously reserved for dentists through new legislation.[3]

Experts in the field of dental public health have argued for revising the current model of oral health care delivery in order to address the needs of the underserved.[3] The dental hygiene profession in Canada has made its philosophy clear in that it envisions a future where "…there are no financial or other barriers to public access to dental hygiene services".[4] In its official position paper[4] on access to oral health services, CDHA made several recommendations that amounted to a significant departure from the status quo in the current oral health care delivery system.

Up until recently, the current model of oral health care provision has been ensured through restrictive legislation requiring dental hygienists provide care with the supervision, order, delegation, or alike of a dentist. While more recently dental hygienists have, almost nationally, achieved self regulated status and some relaxation of legislative language has occurred, direct access to dental hygiene services has been extremely limited. Organized dentistry has strongly opposed the trend towards direct access to dental hygiene care and has, until recently, successfully lobbied government to retain restrictive legislation for dental hygienists.[3]

Thus, dental hygiene has been prevented through stationary public policy and legislation from making a significant departure from the status quo in oral health care delivery. However, as legislation continues to evolve, expectations will mount for dental hygiene to fulfil its expressed vision

for improving the oral health of disadvantaged populations. Dental hygiene has the potential to make an impact in almost all oral health disorders and diseases through its services in prevention, education, oral health promotion, therapeutic interventions and screenings.

Potential impact of dental hygiene

Many oral disorders and diseases can be prevented completely or mitigated through earlier detection with or without treatment. Caries and periodontitis are largely preventable through such personal behaviours as home plaque control measures and diet, environmental conditions, like water fluoridation, and such preventive dental hygiene professional interventions as fluoride applications, placement of dental sealants, prophylaxis and educational strategies.[7] Preventive interventions need to be increased and directly targeted specifically at high risk groups such as those sub population groups identified earlier.[7] Generally, preventive care is simpler and cheaper to deliver, and can circumvent the need for more expensive and technically demanding curative strategies typically provided by dentists.[6,7] In addition to the philosophical grounding for financing the reduction of oral health disparities, the cost of not doing so to society is real. For example, oral disorders contribute to sick leave more than most other health problems and result in considerable loss of work days.[6,13] Thus, most importantly, preventive care preserves natural oral and tooth structures imparting a lifelong benefit.

Oral health education to raise awareness surrounding preventive strategies, particularly in elderly population groups, is important for the reduction of oral health disparities.[14] Because the elderly perceived needs for care do not match actual clinical needs, educational efforts have the potential to appropriately raise utilization rates.[18] A study conducted in Manitoba[8] found that a program focusing on preventive education, skills development and referral for non preventive therapy of the elderly resulted in significant improvements in oral health status. Similar conclusions were made in a review paper of oral hygiene programs for the elderly, and it demonstrated that dental hygienists have a key role in providing oral health education and instruction for long term improvements of oral hygiene in the elderly.[14] In the US, dental hygienists and the preventive care they provide has been recognized as being necessary for meeting the needs of the homebound elderly, and dental hygiene care has a similar potential in Canada as well.[8,16]

A paucity of preventive oral health programs targeting expectant mothers and mothers of preschool children has been identified where dental hygiene skills and knowledge could have greater application and help prevent oral disease before children reach public school, and require more invasive treatment strategies.[29,30] Appallingly, surgical dental treatment is the most common procedure in hospitals for children under fourteen.[6] It has been recommended that young children have oral screenings before their first birthday.[30] For ECC, relying on treatment focused programming is objectionable where less expensive and less traumatic preventive measures, such as oral health promotion, application of chemotherapeutic agents, and screening, are available.[30]

Lack of plaque control has been identified as a major contributing factor for many debilitating oral conditions for at risk groups, so it makes sense that these groups are more aggressively targeted for educational interventions in order to assuage disproportionately poor oral health outcomes. By offering an earlier investment in the oral health of younger populations, society can offset some of the disproportionate, more expensive treatment needs identified later in older populations.[10] Along with plaque control strategies, other dental hygiene interventions, including fluoride applications, periodontal therapies, mouth guards, sealants, and others are available to target oral disease.[29]

In addition to working directly with patients, dental hygienists provide, and could provide, more education for other health professionals who deliver day to day care for underserved population groups.[31] Furthermore, dental hygienists are educated to screen and make appropriate referrals for diagnostic or treatment interventions that are beyond the scope of dental hygiene practice. For example, dental hygienists are ideal health care providers for detecting signs of oral cancer in its earlier, more treatable stages.[32] The former Surgeon General in the US, and leaders in cancer research have advocated for a more prominent role for dental hygiene in educating the public in tobacco use and related oral cancer, and the assessment of the oral cavity in the detection of potentially serious lesions.[32] Dental hygienists provide varying levels of caries screening to Canadian school children directing many school age children for care, but it is apparent that some population groups not currently targeted such as expectant mothers, preschool children, and seniors would benefit from assessment. Furthermore, dental hygienists are able to screen for prosthetic needs, assist in maintaining the cleanliness and identification of dentures, and offer smoking cessation and nutritional counselling.

Changes to legislation have the potential to permit dental hygienists to reach out and provide primary contact and services to those identified as being largely neglected by the current system. These scenarios include acute care, palliative care, collaborative health clinics, community care, homebound services, LTC facilities, independent dental hygiene clinics, public health care, First Nations Reserves, and large corporation dental clinics. The opportunities for dental hygiene outreach are vast and continually evolving.

CONCLUSION

Dental hygienists have the appropriate knowledge and skills for providing care that has the potential to prevent a considerable amount of oral disease, and these services could be provided in a multitude of settings that would address many access issues for disadvantaged groups. These services could address the most significant oral health problems affecting these groups including caries, ECC, periodontitis and oral lesions, thereby having a direct impact on the subsequent levels of disease, dysfunction, and edentulousness. These interventions have the promise to improve the oral comfort and function and ultimately the quality of life for many currently underserved Canadians.

It also appears that the dental hygiene profession has a philosophy and corresponding vision that supports mov-

ing forward in this direction. It is becoming evident that government is increasingly facilitating this process by making the necessary legislative changes for advancement to occur. For dental hygiene to ensure this progression and maintain recent momentum, two key elements require clarity: first, how will necessary change be organized, and second, how will it be funded?

The organization of a meaningful departure from the current status quo will require leadership and planning among all interested groups. Only recently did Canada take the major step in creating and filling the position of a Chief Dental Officer with the aim of better coordinating community oral health from a national perspective.[33] However, provinces do not have a corresponding chief dental officer and there are decreasing public health dental specialists.[3,33] Oral health leadership must be clearly visible and the assessment and planning of oral health care needs to assume a higher priority within provincial health care structures than it does currently in order to move beyond ad hoc public oral health services. The development of the Canadian Federal/Provinicial/Territorial Dental Working Group has been a positive step in determining the unmet oral health needs existing in Canada and the corresponding necessary national and provincial strategies.[34] Only after careful assessment of provincial and community needs can the development and implementation of targeted programming, fully utilizing dental hygiene services, take place.

In 2003, the Canadian Association of Public Health Dentistry (CAPHD) outlined the following goals for the next three to five years,[33] which clearly highlight these preceding points:

To raise awareness of and address inequities in oral health

- Need data—what is the level of oral health across Canada
- Recognizing that health is a provincial responsibility —need to direct our efforts provincially
- Use the media—need to make oral health newsworthy; focus on importance of oral health to overall health
- Strengthen alliances with other dental and non dental associations, e.g. CDA, CDHA
- Look for opportunities to bring oral health focus forward, e.g. prenatal classes, early year initiatives
- Continue sharing information nationally through list serve and website.

While it has been recognized that preventive measures may be the most cost effective method of preventing oral disease in at risk populations,[17] particularly when long term outcomes are measured, implementing programming where none previously exists will require funding.[35] However, if Canadians are serious as a welfare society in addressing social inequities and oral health disparities then these should be considered necessary costs with tangible benefits to our society. In 1931 the Minister of Health, Dr. John Robb stated, "It is recognized by all that dental care is an absolute necessity in the life…[and where people cannot pay for their care]…it is the duty of the municipality and the state to come to their assistance."[3]

While Canadians may be largely unaware of the inequitable distribution of oral health care, it is likely that they will be less complacent about the resulting disparities in oral health status particularly as the impact of oral disease on general health is increasingly recognized. In addition, research demonstrates that children and adults are stigmatized and ridiculed based on perceived facial unattractiveness, and people can be socially impaired and avoid communicating, smiling and laughing as a result of the appearance of their teeth.[7,13] Thus oral disorders impede an individual's ability to maintain a positive self image and satisfying interpersonal relationships.[8] Pervasive oral disease existing within marginalized population groups of Canadians contributes to the inability to live without pain and discomfort and comfortably and effectively masticate meals.[8] Although current policy distinguishes oral from general health,[8] this separation is becoming increasingly difficult to sustain as research is demonstrating the connection of oral health to systemic general health and psychological well being.[4,6] As asserted by Dr. Robb almost eight decades ago, poor oral health must be recognized as having a deleterious effect on one's overall ability to realize a full and productive life.

A substantial departure from the status quo will likely occur incrementally, and this change will require the collective commitment from all interested groups. The dental hygiene profession has the vision, knowledge and skills to be a major part of this advance. Such an evolution will contribute to the improvement of health in its most broad conceptualization of many currently neglected Canadians. This will attest to a commitment of Canadian society for a just allocation of resources so that all Canadians can realize a better life.

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The premise lease: A long term commitment

CDHA's Independent Practice Advisor, Ann E. Wright

In the previous issue of this journal, the importance of good marketing and demographic analysis was discussed when choosing a location for an independent dental hygiene practice. In this issue, we narrow our focus and look at leasing premise space. There is no "rule of thumb" in designing a practice or deciding how much space to lease. Important factors to consider include the number of providers who may be working at one time and whether or not all of the space needs to be developed by opening day. More often than not, landlords will offer suites of a standard size. In general, most commercial sites start at 1000–1200 square feet.

Landlords generally advertise their property on a per square foot basis which is known as the *base rent*. Added to this, are costs for property taxes, maintenance, and insurance. These are known as *triple net expenses*. Some leases even have *additional rent* costs. When you consider that the space will be leased for several years it is important to have a general understanding of the important terms in the agreement and the associated costs. Let's look at an example:

Space to be leased: 1200 sq. ft.

Base rent: $16.50/sq. ft.

Triple net expenses: $10.00 sq. ft.

Therefore, the annual cost of renting this space is 1200 sq. ft. x $26.50/sq. ft. = $31,800, or $2,650/month in the first year. And multiply that amount by the number of years on the lease.

If you have approached a bank or leasing company for your equipment and construction loans, the lending institution will expect that your premise lease term matches or exceeds the term of your loan payment. If the term of your loan is five years, the bank will want your premise lease to run for a minimum of five years.

When negotiating your premise lease, it is important to understand the most common terms.

1. ***The Parties:*** The lease clearly identifies the landlord or lessor and the tenant or lessee.
2. ***Identification of the property to be leased:*** The lease should clearly describe the property to be leased. This includes the legal description. If the property rented is less than the whole building, a plan of the building with the unit to be leased clearly identified should be attached to the lease.
3. ***Starting date and length:*** The lease will state its starting date and length of the term.
4. ***Option to renew:*** As the tenant, including an option to renew the lease is advisable. Usually the option will require the tenant to exercise it within a certain time period before the lease expires. Generally options to renew are multiples of the term of the original lease. It is common to have at least two options. The option to renew is valuable because it guarantees the tenant's right to continue operating their business over time.
5. ***Rent renewal terms:*** The rent will undoubtedly increase in the renewal terms. The rent renewal amount is sometimes set out in the lease, but it is commonly stated as the *fair market value at the time of the renewal*.
6. ***Total rent:*** The lease will usually describe the total amount of rent payable as a fixed yearly amount and as a monthly rate.
7. ***Taxes, operating costs and insurance:*** The landlord will charge each tenant a proportionate share of all the taxes, operating costs, and insurance. These are called *triple net expense*.
8. ***Exclusive use:*** A clause that prevents the owner from leasing space to other tenants who provide a similar service to that specified in the tenant's lease. This clause prevents the landlord from leasing space to a second dental hygiene practice at your location.

Other lease terms:

Additional rent: Landlord's expenses for utilities, janitorial, management fees and other items paid in conjunction with the operation of the building.

Anchor tenant: A major tenant who will draw the majority of customers.

Assignment: The transfer of the tenant's title, right and interest in certain property to another party. Should you wish to vacate the premise before the end of the term, this clause typically states that the assignment of the lease to a third party will not be "unreasonably" withheld by the landlord.

Common Area Maintenance (CAM): This stipulates how much the tenant will pay for maintaining the common area meaning the area within a shopping centre or building which tenants use in common—courtyard, escalators, sidewalks, etc.

HVAC: A building's heating, ventilating, and air conditioning system.

Insurance provision: A clause that requires the tenant to obtain a certain amount of public liability insurance. CDHA has worked with AON Reed Stenhouse, our professional liability insurer to provide clinic errors and omissions, and public liability products for our members who own their own practice.

Notice clause: The clause that establishes the proper method and time frame each party must use to inform the other of matters that require notification as provided in the lease.

CDHA suggests that all independent practising dental hygienists consult a lawyer and an accountant before signing a premise lease. The premise lease represents a substantial operating cost of the practice and is fixed for the term of the lease. As business owner, you are responsible for this amount whether you are working, ill, or on vacation.

CDHA welcomes your feedback: aew@cdha.ca

Envision your retirement

Introducing the new tax-free savings account (TFSA)

A powerful addition to your group retirement and savings program

WHAT'S YOUR DREAM?

It's a new way to save. The Canadian Dental Hygienists Association has added the Great-West Life group TFSA to its group retirement and savings program.

This flexible investment savings plan allows you to earn tax-free investment income.

THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

Administrators of the Voluntary Benefits Program

The benefits are clear

When you invest in your group TFSA, you can:

- Save more and pay no tax on investment income or capital gains
- Get tax-free withdrawals when you want
- Use your savings for any purpose
- Save easily with convenient payroll deductions
- Keep unused contribution room for the future

While not designed to replace your daily savings account, your group TFSA offers the opportunity to save for those big-ticket items that take one to five years of saving such as a house down payment, continuing education or your dream vacation.

You can also use this plan to supplement your retirement savings or to pay for healthcare premiums during your retirement, without dipping into your RRSPs.

Enrolment forms are available at

www.cdha.ca/members/content/canada_life/index.asp.

For more information, contact Khaled Mansour at 613-723-9442 or at retirementplanning@cdha.ca.

THE Great-West Life ASSURANCE COMPANY

2009 Dental Hygiene Programs Recognition Award

Prix de reconnaissance 2009 pour les programmes en hygiène dentaire

The Canadian Dental Hygienists Association is proud to announce the recipients of the *Dental Hygiene Programs Recognition Award*. This award officially recognizes dental hygiene programs whose faculty achieves 100% in CDHA. CDHA congratulates these faculties for demonstrating outstanding commitment to the dental hygiene profession to support and promote their national professional association, and for being exceptional role models to their students.

Camosun College, Victoria, BC

Canadore College, North Bay, ON

College of New Caledonia, Prince George, BC

University of Alberta, Edmonton, AB

L'Association canadienne des hygiénistes dentaires est heureuse de présenter les récipiendaires du Prix de reconnaissance pour les programmes en hygiène dentaire. Ce prix récompense officiellement les programmes en hygiène dentaire dont 100 % des membres du corps professoral à temps plein et à temps partiel font partie de l'ACHD. L'ACHD félicite ces corps professoraux de montrer de façon exemplaire, par leur appui à leur association professionnelle nationale et la promotion qu'ils en font, que la profession d'hygiéniste dentaire leur tient à cœur. Elle les félicite aussi de servir de modèles exceptionnels auprès de leurs étudiants et étudiantes.

CDHA ACHD
THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

E-mail netiquette

CDHA staff

CDHA staff communicates daily with dental hygienists from across Canada to answer questions about association membership, policy and resources, and dental hygiene practice issues. This contact frequently employs electronic mail or e-mail. When used effectively e-mail allows members to deliver a message to a specific individual, avoid being placed on hold, and permits contact outside of normal business hours—a particular bonus overcoming the obstacle of reaching members across six time zones.

In this column we review some online resources that present helpful guidelines in composing clear and effective e-mail messages, and in ensuring that all enquiries receive the timely and efficient responses desired.

Prof. Albert Mehrabian's pioneering work on communications provides a model for the effectiveness of spoken communication to explain the importance of *meaning* as distinct from words:

- 7 per cent of meaning is in the words spoken.
- 38 per cent of meaning is in the way that words are said.
- 55 per cent of meaning is in facial expression.

As Alan Chapman[1] writes, transferring this model to electronic media means that greater care must be taken with language and tone because the visual channel does not exist.

Mehrabian's model partially explains why e-mail requests should be very clear about the exact action required in order to avoid any uncertainty on the recipient's part and frustration for the sender. Three basic kinds of business related e-mails that CDHA receives are:

1. Providing information: "My membership ID number is 123xyz."
2. Requesting information: "Have you received my membership application?"
3. Requesting action: "Please send me a receipt for membership fees."

One way to maximize e-mail effectiveness is by making the subject line a "headline" that provides clear information about what response is needed, and which allows the recipient to quickly scan and categorize the message.

An e-mail address does not reveal the province or territory of residence. When requesting such particulars as regulation or employment issues, the message should therefore be specific, for example, "What are dental hygiene salary levels in Nova Scotia or Edmonton?" Also very helpful would be to sign with both first and last names, and to include a CDHA membership number on each e-mail for CDHA staff to confirm that contact details are correct, and avoid misdirecting a reply.

Electronic mail resources

S. Robbins. *Tips for Mastering E-mail Overload*. Harvard Business School: 2004.

Stever Robbins is president of LeadershipDecisionworks, a consulting firm specializing in strategies to sustain corporate productivity. This brief guide summarizes a number of coping mechanisms to help manage and "tame electronic missives". http://hbswk.hbs.edu/archive/4438.html

Sherwood, Kaitlin Duck. *A Beginner's Guide to Effective E-mail*.

The author quotes a 2007 PEW Internet and American Life Project Survey that found 73 per cent of adults regularly connect to the Internet and almost all of them use e-mail. Sherwood describes e-mail as cheaper, faster, less intrusive than a phone call, and with less hassle than a fax. Kaitlin adds that it was obvious that a large number of users did not understand how to adjust their communication styles to this medium. This guide includes sections on context, page layout, and formality designed to maximize e-mail effectiveness. http://www.webfoot.com/advice/email.top.php

Ross, Seth T. *Netiquette Home Page*.

"Netiquette" outlines the dos and don'ts or "rules of the road" of cyberspace. This page provides links to a number of associated sites including a Netiquette Quiz for your browsing pleasure. http://www.albion.com/netiquette/index.html

Spring, T. *The Ten Commandments of E-mail*.

According to estimates by International Data Corporation, billions of e-mail messages are sent each day and the volume is increasing volume. These ten rules, first proposed in 1999, are valid today and were designed to facilitate the management of these messages. http://www.cnn.com/TECH/computing/9903/31/commandments.idg/

Microsoft Security. *Recognizing Phishing Scams and Fraudulent/Hoax Email*.

"Phishing" is a type of message which attempts to steal personal data such as financial records and account passwords. The main thing that phishing e-mail messages have in common is asking for personal data either directly or via deceptive web addresses.

This site by Microsoft explains how to recognize and handle suspicious messages and protect your identity. http://www.microsoft.com/protect/yourself/phishing/identify.mspx

Some experts stress a definite hierarchy when it comes to the weight given to communications media.[2] While it is hard to surpass face-to-face meetings for impact, electronic messages when clear and unambiguous are instant, flexible and controllable.

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CDHA welcomes your feedback: library@cdha.ca

Recognizing excellence in 2008

CDHA annually recognizes distinctive efforts by dental hygienists and dental hygiene students who promote oral health and overall wellness, and who advance the dental hygiene profession. CDHA congratulates all participants and winners of the 2008 Dental Hygiene Recognition program.

CDHA Global Health Initiative prize 2008 in participation with Sunstar G•U•M

This honour, with a $3,000 prize, is presented to **Leanne Rodine of Calgary, AB,** a dental hygienist who has committed to volunteering as part of an initiative to provide oral health related services in a disadvantaged community or country.

Leanne states that she is privileged to continue with her commitment to the 1000 Smiles project in Jamaica. Jamaica has only one dentist for every 80,000 people, and the 1000 Smiles initiative aims to offer free dental care to families and oral health education to school children. In 2008, over 250 volunteers provided 15,000 people with services and preventive education. Leanne leads the education segment of the project, and along with her family and friends has created, revised, and assembled oral health lesson plans. One of the positive results of this information is that schools are providing more dentally friendly choices in their canteens. Through the involvement of school children and local businesses, work is underway to develop a culturally appropriate oral health storybook.

CDHA Leadership prize 2008 in participation with Dentsply

This honour, with a $2,500 prize, is presented to **Karen Trentalance of Victoria, BC,** currently enrolled in a dental hygiene program, who has contributed significantly to her local, academic or professional community through involvement and leadership.

Her election as class president at Camosun College in Victoria was the first step for Karen on a journey of personal growth. Moving out of her comfort zone provided the inspiration and opportunity to become more proactive in her education and to develop leadership and public speaking skills. Among other activities, Karen coordinated her class initiative to prepare and fit custom mouth guards for a high school basketball team. A summer position with the College of Dental Hygienists of British Columbia increased her understanding of the role of a regulatory authority in the protection of the public, and led to responsibility for several research projects. Her experience as a student has encouraged Karen to pursue a master's level education to become an educator who will provide support and guidance to future dental hygiene students.

CDHA Achievement prize 2008 in participation with Sunstar G•U•M

This honour, with a $2,000 prize, is presented to **Tara Bladon of Algonquin College, Ottawa, ON,** a student who has overcome a major personal challenge during her dental hygiene education.

The personal challenge that Tara faced has reinforced her desire to become a caring health care provider. Subsequent to an automobile accident, she experienced whiplash injuries and ensuing nerve damage to her hands and arms. Advice from family, friends, and teachers encouraged Tara to take the necessary time from her studies to recover. Following ten months of physiotherapy and continuing therapy, she was able to return to her studies with new insight and appreciation regarding the difficulties faced by medically compromised clients.

CDHA Visionary prize 2008 in participation with TD Insurance Meloche Monnex

This honour, with a $2,000 prize, is presented to **Juliet Dang of Winnipeg, MB,** currently enrolled in Master of Science dental hygiene program, who contributed significantly to the advancement of the dental hygiene profession by describing a vision for the profession, including future initiatives, strategies and goals.

Graduation with a dental hygiene diploma certainly altered Juliet's view of a dental hygienist from that of a "tooth polisher" to that of a primary oral health care professional. However, Juliet feels that the general public often fails to appreciate both the role of dental hygienists and the importance of regular preventive oral care. She believes that creating greater awareness will benefit both the profession and the public. Multimedia, including television, radio and such Internet sites as YouTube to relay this message and provide education is essential for this mission. Juliet emphasizes that, as always, teaching and communication are key components of the dental hygiene profession.

CDHA Oral Health Promotion prize 2008 in participation with Crest Oral-B

These prizes are presented for creative promotion of dental hygiene, including education, community impact, and innovative partnerships. Three categories in this listing are:

1. a dental hygiene school
2. a clinic team
3. an individual

The prize money is shared equally by the winner and the winner's local dental hygiene society.

1. **Dental Hygiene School**, prize of $2,000 to **Camosun College Dental Hygiene program, Victoria, BC**

The dental hygiene class of 2009 strives to promote oral health and increase access to preventive services. Providing information on early childhood caries to new parent groups, collaborating with seniors' resident care attendants, and fabricating custom mouth guards for high school athletes are just some of the community projects the students have undertaken. The vision statement of the class affirms: "We aspire to empower our clients and profession through education, support and empathy to improve oral and general health." The students are eager to carry forward their passion and dedication as they enter the dental hygiene profession.

2. **Clinic Team** prize of $2,000 to **Darlene Tam** and the **Mobile Outreach Team**, of Vancouver, BC

As an aging population with high oral cancer risk factors and barriers to health care access, residents of Vancouver's Downtown Eastside Chinatown form a community in great need of oral cancer prevention and early detection initiatives. The team serves this community as part of the British Columbia Oral Cancer Prevention Initiative. To increase the capacity for promoting oral cancer awareness, the team has worked with the Carnegie Library, one of the main gathering centres in this community. Through table clinics, video, slide shows, and educational brochures, the team attempts to improve the lives of residents in this district.

3. **Individual** prize of $1,000 to **Jasmin Gomez of Toronto, ON**

As she completes her final year of college, Jasmin has discovered the rewards of a dental hygiene career to be much more than she imagined. She finds great satisfaction in providing oral health education to clients. Jasmin has volunteered:

- to prepare a table clinic for a local secondary school of 2000 students,
- to present interactive displays on correct home care techniques through PowerPoint,
- to provide samples of toothbrushes, floss and toothpaste, and
- to answer questions about tobacco use cessation, tooth whitening and orthodontic treatment.

Jasmin participated in Wrigley's Canada clinic for older adults. Along with several classmates, Jasmin is currently preparing a community health project to assess the oral health needs of a group of elementary school children in order to plan and implement a lesson geared to their needs.

CDHA Dental Hygiene Baccalaureate Student prize 2008 in participation with Crest Oral-B

This honour, with a $1,500 prize, is presented to **Jodi Sperber of University of British Columbia, Vancouver, BC**, for contributing to the advancement of dental hygiene.

When Jodi learned of the need for dental health education for her three year old son's Montessori preschool classmates, she utilized the dental hygiene process of care to plan and implement a classroom presentation. Through her research into the topic of early childhood caries (ECC), Jodi determined that the incidence of ECC was increasing in the Comox valley. Her educational initiative has had many positive results including the opportunity to build relationships with primary caregivers of students at high risk for ECC.

CDHA Innovation in Oral Cancer Awareness prize 2008 in participation with LED Dental Inc.

This honour, with a $1,500 prize, is presented to **Darlene Tam of Vancouver, BC**, a dental hygienist who has made a significant contribution to increasing awareness of oral cancer and the benefits of early discovery, in clinical practice or the community, through innovative oral health promotion initiatives.

Downtown Eastside [DTES], one of Vancouver's oldest and most impoverished neighborhoods, is a hard-to-reach and medically underserved community. For many reasons it is a population at high risk for oral cancer. During events such as the "Alley" and "S.U.C.C.E.S.S." health fairs, Darlene volunteered and presented education of smoking/drug/alcohol cessation and oral cancer awareness and screening services in both English and Cantonese. As someone who grew up in DTES Chinatown, Darlene feels a deep responsibility to address the inequities in health care between many of these residents and those of the rest of Vancouver.

CDHA Dental Hygiene Diploma Student prize 2008 in participation with Crest Oral-B

This honour, with a $1,000 prize, is presented to **Tracy Law of George Brown College, Toronto, ON**, for contributing to the advancement of dental hygiene.

Through her participation in the Interprofessional Learning Clinic at her school, Tracy has provided health promotion initiatives for seniors at a retirement home as well as for the students and staff at her college. Health promotion has become a passion for Tracy, and she believes that her chosen profession of dental hygiene lends endless opportunities to enhance the understanding of the importance of oral health.

CDHA received many excellent submissions for these prizes and wishes to thank all participants who put so much effort and creativity into their initiatives and entries to the Recognition Program. While not every submission could win a prize, each participant contributed to the dental hygiene community. We further express our appreciation to all the sponsors for their support in collaborating with CDHA to increase public awareness across Canada of both the dental hygiene profession and oral health promotion.

...continued on page 86

A healthier mouth for a healthier you!

MORE CHOICE. BETTER ACCESS.

New dental hygiene service delivery options *enable Canadians to receive improved access to oral health services, including* ***direct access to a dental hygienist in their own practice.***

Dental hygienists: Your partners in oral and overall health

THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

IMPROVING ACCESS WHILE DELIVERING HIGH QUALITY DENTAL HYGIENE SERVICES

Dental hygienists are primary health care providers whose education and training focus on the prevention of oral disease and the promotion of oral health. By working one-on-one with clients, dental hygienists provide the best service possible while establishing a relationship that may reduce anxiety and fear.

Over the past ten years the Canadian oral health care system has changed significantly. Today, most dental hygienists can establish their own private practice, that is, a practice outside of a dentist's office.

Dental hygienists can operate their own practice in a number of different provinces, including:

- Alberta
- Ontario
- Nova Scotia
- Manitoba
- British Columbia
- Saskatchewan

Other provinces and territories are also moving towards this option, recognizing the benefit of giving Canadians greater access to oral health care.

No matter how services are delivered, provincial dental hygiene regulators protect the public and ensure a high standard of conduct and level of skill.

IMPROVING COLLABORATION

Private practice increases the opportunity for professional collaboration between dental hygienists and other health care professionals. Today, dental hygienists work with physicians, nurses, denturists, dieticians, occupational therapists, speech language therapists and massage therapists.

Greater collaboration enhances both the effectiveness and efficiency of the practice. This is particularly important given the links between oral disease and heart disease, diabetes, lung disease and pre-term, low birth weight babies.

NEW WAYS TO DELIVER ORAL HEALTH CARE

Private practice enables dental hygienists to establish different practice settings, helping the public to obtain oral care services from the most appropriate professional, when and where they need it. For example, mobile practices bring dental hygiene services to remote communities and housebound clients, while storefront locations provide ease of access to Canadians at all stages of life, from infancy to senior adulthood.

Practice settings can take a variety of forms, including:

Office or retail—Providing services in a fixed location.

Corporate—Providing in-house services for employees.

Private home—Providing services to people who cannot travel or have no access to service providers.

Community health centre—Providing services in a multidisciplinary health setting.

Long term care or residential care facility—Providing services to seniors or individuals who are mentally or physically challenged.

Community centre—Providing services such as mouth guard clinics, oral health screening and education programs.

School or daycare—Providing oral health education.

No matter the setting, with greater access to care, Canadians will enjoy better oral and general health.

WHAT CAN I EXPECT WHEN I VISIT A DENTAL HYGIENIST?

Dental hygienists provide comprehensive oral health care including assessment, planning, implementation and evaluation.

ASSESSMENT—Here, the dental hygienist gathers the client's health history and conducts a head, neck and oral examination to make an assessment and a detailed dental hygiene diagnosis. At this stage, the dental hygienist can detect tooth decay, damaged restorations (e.g., fillings and crowns) and chipped or worn tooth surfaces. An assessment of the soft tissues of the mouth provides information about the health of the tongue, lips, teeth and gums.

PLANNING—A collaboration with the client to develop goals and objectives for his or her oral health.

IMPLEMENTATION—This involves putting the oral health care plan into action. For example, the dental hygienist provides services such as scaling, placement of cavity prevention agents and pit and fissure sealants for children.

EVALUATION—The dental hygienist provides an ongoing evaluation of the effectiveness of the services provided.

WHAT IF I REQUIRE ORAL HEALTH CARE THAT IS OUTSIDE THE DENTAL HYGIENIST'S AREA OF EXPERTISE?

A dental hygienist is trained to determine when a referral is necessary. When required, a referral may be made to another health professional, such as a dentist, denturist, dental specialist, speech therapist or physician.

CAN MY DENTAL HYGIENIST TAKE X-RAYS OR PRESCRIBE MEDICATION?

In Alberta, a dental hygienist can prescribe and review an x-ray for the purpose of making a dental hygiene diagnosis. In all other provinces and territories, a dentist prescribes the x-ray; the dental hygienist then captures the x-ray images and reviews them with the dentist. Dental hygienists in Alberta can also prescribe medication to treat dental hygiene related illnesses.

Over time, it is anticipated that dental hygienists in other provinces will be able to expand their services.

Une bouche en santé, c'est un corps en santé!

DES SERVICES ENCORE PLUS ACCESSIBLES ET VARIÉS

*Les **nouvelles options** dont disposent les hygiénistes dentaires offrent dorénavant à la population canadienne un **meilleur accès aux soins buccodentaires** ainsi qu'un accès direct aux cliniques privées d'hygiène dentaire.*

Les hygiénistes dentaires : vos partenaires pour le maintien d'une bonne santé

THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

UN MEILLEUR ACCÈS À DES SOINS D'HYGIÈNE DENTAIRE DE GRANDE QUALITÉ

Les études et la formation des hygiénistes dentaires visent d'abord la promotion de la santé buccodentaire et la prévention des maladies qui la menacent. En fournissant des soins de santé primaires individuels, les hygiénistes dentaires offrent à chaque client les meilleurs soins possible tout en établissant avec chacun une relation qui favorise la détente et qui atténue ses craintes.

Au cours des dix dernières années, le système de soins buccodentaires canadien s'est profondément modifié. La plupart des hygiénistes dentaires peuvent désormais ouvrir un cabinet privé d'hygiène dentaire, indépendant de tout cabinet de dentiste.

Plusieurs provinces permettent l'établissement de cabinets privés d'hygiène dentaire, notamment

- l'Alberta
- la Nouvelle-Écosse
- la Colombie-Britannique
- l 'Ontario
- le Manitoba
- la Saskatchewan

Afin que leurs populations profitent des avantages qu'offre un meilleur accès aux soins buccodentaires, d'autres provinces et territoires s'engagent aussi sur cette voie.

Mais quelles que soient les modalités des services offerts, les organismes de réglementation de chaque province protègent le public et garantissent la compétence des hygiénistes dentaires et le respect de normes de conduite élevées.

NOUVELLES FAÇONS D'OFFRIR DES SOINS BUCCODENTAIRES

La pratique autonome permet aux hygiénistes dentaires d'exercer leur profession dans divers contextes. Grâce à elle, le public reçoit les services dont il a besoin, au moment opportun et des professionnels qui conviennent le mieux. Par exemple, grâce aux cliniques mobiles d'hygiène dentaire, les clients confinés chez eux ou vivant en région éloignée ont accès aux soins, de même que, de la petite enfance à un âge avancé, la population en général peut obtenir ces soins dans un cabinet d'hygiène dentaire.

La profession d'hygiéniste dentaire peut s'exercer dans divers contextes, notamment

Cliniques ou environnements commerciaux — Services offerts dans des locaux permanents.

Entreprises — Services offerts en milieu de travail.

Chez les clients — Services offerts aux clients qui ne sont pas en mesure de se déplacer ou qui n'ont pas accès à ces services dans leur région.

Centres de santé communautaires — Services en contexte multidisciplinaire.

Établissements de soins de longue durée ou de soins pour bénéficiaires internes — Services aux personnes âgées ou aux clients atteints d'incapacité physique ou mentale.

Centres communautaires — Services tels que l'ajustement de protège-dents, l'évaluation de la santé buccodentaire et des programmes de sensibilisation.

Écoles et garderies — Sensibilisation en matière de santé buccodentaire.

Quel que soit le contexte, un meilleur accès aux soins signifie une meilleure santé buccodentaire et une plus grande santé en général pour tout le monde.

QUE PEUT FAIRE MON HYGIÉNISTE DENTAIRE?

Les hygiénistes dentaires offrent une gamme complète de soins buccodentaires, y compris l'évaluation des besoins, la planification, la mise en œuvre du plan de traitement et l'évaluation des résultats.

ÉVALUATION DES BESOINS — Les hygiénistes dentaires prennent en note les antécédents médicaux des clients et leur examinent la tête, le cou et la bouche afin d'évaluer leurs besoins et de formuler un diagnostic d'hygiène dentaire. Cet examen peut détecter la présence de caries dentaires, d'une détérioration des restaurations ou obturations, y compris des couronnes, et de dents ébréchées ou usées. Une évaluation des tissus mous de la bouche fournit des renseignements sur la santé de la langue, des lèvres, des dents et des gencives.

PLANIFICATION — En collaboration avec leurs clients, les hygiénistes dentaires définissent des objectifs de santé buccodentaire.

MISE EN ŒUVRE DU PLAN DE TRAITEMENT — Il s'agit ici de mettre le plan en action. Par exemple, les hygiénistes dentaires peuvent détartrer les dents ou appliquer des produits anticarie ou des résines de scellement au niveau des puits et fissures sur les dents des enfants.

ÉVALUATION DES RÉSULTATS — Les hygiénistes dentaires réévaluent périodiquement l'efficacité des traitements fournis.

QU'ARRIVERA-T-IL SI LES SOINS DONT J'AI BESOIN DÉPASSENT LES COMPÉTENCES DE MON HYGIÉNISTE DENTAIRE?

En raison de leur formation, les hygiénistes dentaires savent quand recommander leurs clients à d'autres professionnels, qu'il s'agisse de dentistes, de denturologistes, de spécialistes, d'orthophonistes ou de médecins.

EST-CE QUE MON HYGIÉNISTE DENTAIRE PEUT PRENDRE DES RADIOGRAPHIES OU PRESCRIRE DES MÉDICAMENTS?

Les hygiénistes dentaires de l'Alberta peuvent demander et lire une radiographie pour poser un diagnostic en hygiène dentaire. Partout ailleurs au Canada, il revient au dentiste de demander une radiographie et à l'hygiéniste dentaire de la prendre, puis de la lire en compagnie du dentiste. En Alberta, les hygiénistes dentaires peuvent aussi prescrire des médicaments destinés au traitement de maladies liées à l'hygiène dentaire.

Avec le temps, on s'attend à ce que les hygiénistes dentaires des autres provinces puissent offrir un plus grand nombre de services.

COLLABORATION ACCRUE

La pratique autonome de l'hygiène dentaire multiplie les occasions de collaboration professionnelle entre les hygiénistes dentaires et les autres professionnels de la santé. De nos jours, les hygiénistes dentaires travaillent de concert avec des médecins, des infirmières, des denturologistes, des diététistes, des ergothérapeutes, des orthophonistes et des massothérapeutes.

La collaboration accroît à la fois l'efficacité et l'efficience des services, ce qui est d'autant plus important puisque la maladie buccodentaire est associée aux maladies cardiovasculaires et pulmonaires, au diabète et à la naissance de bébés prématurés ou de faible poids.

Over the counter xerostomia remedies currently available in Canada

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ABSTRACT

Xerostomia or dry mouth syndrome is a common but often overlooked condition, which can contribute to tooth decay, oral mucosal lesions, halitosis, and greatly affect an individual's quality of life. While clinical trials on dry mouth palliation date back to the early 1980s, the ideal remedy, with good substantivity, lubricity, antimicrobial properties facilitating mucosal healing and enamel remineralization, is yet to be found.

There are a number of over the counter (OTC) remedies designed to palliate dry mouth which vary greatly in active ingredients, delivery form, availability, price and effectiveness. Current xerostomia products can be divided into two broad categories, saliva substitutes and saliva stimulants, and can further be classified into four groups based on the main ingredient: biopolymers, salivary enzymes, acid based, and petroleum based. The purpose of this paper is to present a review of the literature in conjunction with the Health Canada Drug Database (DDB) in order to provide up to date, evidence based information on OTC xerostomia products in general, with emphasis on those available in Canada at the time of publication. Analysis of scientific publications is intended to provide insight into composition, delivery vehicle, benefits, side effects, and effectiveness of such preparations, enabling optimal delivery of care in edentulous and dentate patients with xerostomia.

RÉSUMÉ

La xérostomie, ou syndrome de la sécheresse buccale, est un trouble fréquent mais souvent ignoré qui peut faciliter la carie dentaire, les lésions de la muqueuse buccale, la mauvaise haleine, et affecter grandement la qualité de vie des personnes. Si les essais cliniques visant à pallier la sécheresse buccale remontent au début des années 1980, l'on cherche toujours le remède idéal dont les éléments substantiels, lubrifiants et antimicrobiens faciliteront la guérison de la muqueuse buccale et la reminéralisation de l'émail.

Un certain nombre de remèdes accessibles sans ordonnance visent à pallier la sécheresse buccale avec une grande variété d'ingrédients, de modalités d'administration, de disponibilité, de prix et d'efficacité. Les produits actuels contre la xérostomie peuvent se répartir en deux grandes catégories, les substituts de la salive et les stimulants salivaires. On peut aussi les répartir en quatre groupes selon leur ingrédient principal : les biopolymères, les enzymes salivaires, les remèdes à base d'acide et ceux qui sont à base de pétrole. Le présent article présente une revue de la littérature en regard de la Base de données sur les produits pharmaceutiques (BDPP), de Santé Canada, offrant de l'information fondée sur des données probantes sur les produits généralement accessibles sans ordonnance contre la xérostomie et soulignant ceux qui sont accessibles actuellement au pays. L'analyse des publications scientifiques donne un aperçu des diverses préparations : composition, administration, bienfaits, effets secondaires et efficacité, permettant d'optimiser la prestation des soins chez les patients édentés ou dentés qui ont une xérostomie.

Key words: xerostomia, dry mouth palliation, over the counter xerostomia remedies, saliva substitutes, saliva stimulants

INTRODUCTION

Xerostomia is the subjective sensation of dry mouth characterized by a reduction or complete loss of salivary flow, resulting in oral dryness and alterations in salivary composition. Problems with mastication, swallowing, speaking, taste alterations, and halitosis are commonly reported among individuals with dry mouth.[1–4] Dry mouth is also implicated in an increased risk of tooth decay and a development of oral candidiasis.[5] There are numerous causes such as irradiation therapy to the head and neck region, uncontrolled diabetes mellitus, Sjögren's syndrome, renal failure, HIV associated salivary gland disease, and multiple xerostomia inducing medications.[1] Other contributing factors include cigarette smoking, mouth breathing and systemic dehydration.[1,5] Dry mouth can induce rapid deterioration in oral health and greatly impair an individual's quality of life.

The purpose of this article is to assess the literature in conjunction with the Health Canada Drug Database on the symptomatic management of xerostomia, with particular reference to over the counter (OTC) remedies currently available in Canada, as well as to review those remedies not currently available in order to provide a broader coverage of the subject.

OTC xerostomia palliation remedies include both saliva substitutes and saliva stimulants. Saliva substitutes are designed to provide the benefits of saliva, including enhanced mucosal lubrication,[2,6] antibacterial,[7] and remineralizing effects.[7,8] Gels, moisturizing viscous liquids, moisturizing sprays and oral rinses are examples of saliva substitutes. Saliva stimulants, on the other hand, facilitate salivary flow by either gustatory or mechanical stimulation, or a combination of both, and include chewing gum, lozenges, pastilles, and tablets.

Xerostomia remedies can be classified into four groups based on the active ingredient as shown in Table 1:

1. Biopolymer based, including plant mucilage, xantham gum and animal mucin;
2. salivary enzyme based;
3. acid based; and
4. petroleum based products.

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Table 1: Classification of xerostomia remedies based on the main ingredients

Biopolymer based (carboxymethylcellulose [CMC] hydroxyethylcellulose [HEC])	**Salivary enzyme based** (lactoperoxidase, lyzozyme, glucose oxidase)	**Acid based** (malic, citric, ascorbic acids)	**Petroleum based gum** (petroleum derivative)
Plant mucilage: • Moi-stir (CMC) • MouthKote (Yerba santa) • Biotene Oralbalance products (HEC) • Aloe vera gel (Aloe barbadensis) • Salinum (Linum usitatissimum)* • Glandosane (CMC)* • Oralube (CMC)* • Salivart (CMC)* Animal mucin: • Saliva Orthana (bovine mucin)* • Saliva Medac (porcine mucin)* Xantham gum: • Xialine (Xanthomonas campestries byproduct)*	Biotene Oralbalance products: • Moisturising gel • Moisturising liquid • Antibacterial toothpaste • Chewing gum • Mouthwash	Salivix* Salivin* Thayers Saliva Sure	Trident chewing gum Extra chewing gum Biotene chewing gum

* denotes products currently unavailable in Canada

1. Biopolymer based substitutes

Plant mucilage saliva substitute

Plant mucilage, derived from tree pulp, yerba santa, linseed, aloe vera, and *opuntia streptocantha* plants, has been shown to be beneficial in alleviating dry mouth symptoms.[9–14] Shannon et al.[10] first reported the use of plant mucilage in the treatment of dry mouth. Plant mucilage such as carboxymethylcellulose (CMC) and hydroxyethylcellulose (HEC), are hygroscopic, odourless, water-soluble powders used in concentrations of up to 1 per cent in artificial saliva preparations.[15] A number of studies have demonstrated the effectiveness of CMC and HEC in improvement of dry mouth.[7,9–11,16–20] A decrease in oral candidiasis in cancer and Sjögren's patients[7] and inhibition of demineralization of bovine enamel[21,22] has also been reported. Most of these studies, however, did not use a control group to observe whether the improvement of xerostomia with the use of CMC or HEC was better than with a placebo. Demineralization of sound bovine enamel and reduction of its rehardening potential were reported with CMC- and HEC-containing products such as Glandosane® spray and Biotene® Oral Rinse.[8,22] Other studies demonstrated that CMC and HEC formulations with higher viscosity, such as gel, appeared to have superior bioadhesion, longer retention and better patient acceptance.[9,16,17,23] In general, no side effects have been associated with the use of CMC or HEC saliva substitutes, with the exception of reported stickiness of the CMC to the lips at night,[24] and a slight irritation of the oral mucosa.[18]

Xerostomia products containing CMC and HEC are widely available in Canada and include CMC based Moi-Stir® moisturizing spray, Mouth Kote® moisturizing spray and packets (also containing plant mucilage), and HEC and enzyme based Biotene Oralbalance® products (chewing gum, toothpaste, moisturizing liquid and gel, oral rinse, and denture adhesive gel for dry mouth). The CMC containing products Glandosane®, Oralube®, and Salivart® sprays are no longer available in Canada.[25]

Yerba santa (*Eriodictyon glutinosum*) is a sticky evergreen shrub containing volatile oils, flavonoids, and resin. This sweet aromatic herb is used in the palliation of dry mouth.[15] In a double blind, clinical study conducted at the University of Minnesota,[13] the product Mouth Kote® containing yerba santa was observed to provide the longest lasting relief for patients with dry mouth compared to other products tested (Xerolube®, Salivart® and water used as control). In a study by Stewart et al.,[12] the effectiveness of V6 chewing gum, Sorbee sour lemon lozenges and Mouth Kote® spray were compared, and although statistical significance in effective alleviation of xerostomia was not achieved for any of the tested products, subjective improvement of clinical symptoms of dry mouth, assessed by the patient questionnaires, was noted and more than half of the subjects wanted to continue using the products.[12] Mouth Kote® is readily available in liquid packets and 60 ml. and 240 ml. spray bottles.[25]

Linseed extract (*Linum usitassimum*) is derived from flax seed and used in dry mouth remedies for its soothing and lubricating effect on the mucous membranes.[15] Linseed based Salinum® was shown to be similar to human saliva with respect to surface tension,[6] reaching clinical and statistical significance when compared with a CMC based product, MAS-84.[20] Linseed extract is available in health food stores across Canada, however Salinum® is not available in Canada[25].

Aloe vera (*Aloe barbadensis*) is a semi tropical plant that has been widely used as a healing and moisturizing agent due to its high content of proteins and biological stimulants.[15] Aloe vera gel was rated the best in alleviation of dry mouth in postradiation xerostomia patients as compared to Glandosane®, rape seed oil, and Saliva Medac®.[9] Despite aloe vera's popularity, scientific research on its use in xerostomic patients is limited. In Canada, aloe vera gel can be found at many health food stores.[25]

Nopal (*Opuntia streptacantha)* is a vegetable cactus containing a high percentage of mucilage and pectin. It is believed to coat and protect the gastrointestinal tract, and

has been used as a saliva substitute in patients with xerostomia.[15] In a recent preliminary study,[14] nopal was shown to be an alternative, inexpensive, and easy treatment of xerostomia without any adverse effects.[14] No *opuntia streptacantha* based dry mouth products are currently available in Canada.[25]

No adverse effects have been reported with the use of Mouth Kote®, Salinum®, aloe vera gel or nopal. Although these remedies have shown promising benefits, more studies are needed to support their use in xerostomia palliation. As there has been growing public interest in natural plant remedies, the popularity of these products is expected to increase.

Animal mucin based saliva substitutes

Mucin (or gastric mucin) is a high molecular weight protein derived from the hog's stomach lining or from the bovine submaxillary gland, and is used in artificial saliva formulations.[15] Some European researchers advocate the use of animal mucin based artificial saliva, emphasizing superior moisturizing effect, longer retention rate, good film forming capability, superior taste, lesser amount required, and better acceptance by patients.[24,26–28] Saliva Orthana® and Saliva Medac® are among the most widely distributed mucin preparations in Europe.[15] Kielbassa et al. [29] reported reduction of mineral loss and lesion depth whereas other studies demonstrated that the addition of mucin into xerostomia products reduced the rehardening potential of softened human enamel,[8,30] and produced no beneficial effect on lactobacilli and yeast colonies.[31,32] The most frequently reported side effects of mucin based artificial saliva include mucosal burning, nausea, unpleasant taste, a "gummy" consistency, and an inability to improve dry throat.[12,24,27,28,32,33] Although a variety of mucin products are available in Europe, lozenge, spray, chewing gum, and oral rinse,[24,26–28,34] it seems that some have now been discontinued.[15] Given the fact that mucin is derived from either bovine submaxillary glands or hog's stomach lining, bovine spongiform encephalopathy and infectious porcine encephalomyelitis are some of the concerns expressed with regards to the use of mucin products.[35,36] Another important consideration is that animal based artificial saliva products may not be accepted by vegetarians and certain religious communities. Although no animal mucin containing xerostomia products are currently available in Canada,[25] it is important to be aware of them since they can be easily purchased through the Internet. Refer to Table 2 for a complete list of over the counter xerostomia remedies available in Canada.

Xantham gum based saliva substitutes

Xantham gum is a natural gum polysaccharide used as a food additive and rheology modifier. It is produced by a biotechnological process involving fermentation of glucose by the *Xanthomonas campestris* bacteria.[15] Xantham gum based Xialine® spray was able to inhibit demineralization of bovine enamel in vitro,[37] and produced a significant improvement in dry mouth symptoms, particularly in benefiting speech and taste,[38] with no side effects reported. No xantham gum based dry mouth remedies are currently available in Canada.[25]

2. Salivary enzyme based substitutes

Biotene Oralbalance® products utilize a salivary enzyme system composed of glucose oxidase, lactoperoxidase, and lysozyme. Glucose oxidase is an enzyme, obtained from certain fungi, which catalyses the oxidation of glucose to gluconic acid, and produces hydrogen peroxide. Lactoperoxidase is a glycoprotein derived from bovine milk, and has no antibacterial effect on its own; but in combination with thiocyanate (naturally present in saliva and gastric juices) and the produced hydrogen peroxide, the resulting chemical reaction creates an antibacterial compound which has a bacteriostatic effect on most bacteria within the mouth.[15] This salivary enzyme system is used as an ingredient in dry mouth remedies for the prevention of dental caries.[16,17,39–44] Oralbalance® gel and Biotene® toothpaste were shown to be have been effective in alleviation of oral dryness in patients with persistent xerostomia,[16,39] in reducing the plaque and sulcus bleeding indices, and slowing the rate of supragingival plaque formation.[40] Patients with more pronounced xerostomia as well as denture wearers benefited the most from using Biotene Oralbalance® gel, especially at night.[17,44] A combination of Biotene® toothpaste and Oralbalance® moisturising gel resulted in a decrease in the number of inflammatory cells, diminution of tissue keratinization, and a return to normal epithelial cells in Sjögren's, lichen planus, leukoplakia, and glossitis patients.[45] However, other studies demonstrated no effect from the use of Oralbalance® gel and Biotene® toothpaste on cariogenic flora, *Candida* species, and plaque acidogenicity in xerostomic patients, as well as in individuals with normal salivary flow.[39,40,42]

Although not particularly beneficial for healthy individuals, there is evidence that patients with hyposalivation can benefit from restoring some of the defensive properties of saliva.[43] Almost all literature on Biotene Oralbalance® products was partially or fully sponsored by the manufacturer, with a crossover study design being predominant, which in turn, brings a potential problem of a carry over and order effect. Another important consideration is the presence of HEC in all Biotene® formulations. It is difficult to say whether the beneficial effects of these products are due to HEC, the patented salivary enzyme system, or to a combination of both. It should also be mentioned that Biotene® Oral Rinse was found to significantly demineralize sound bovine enamel due to low pH and absence of calcium, phosphate and fluoride ions in the formula.[22] No side effects associated with the use of a salivary enzyme system were reported. Biotene Oralbalance® products are available in Canada and include dry mouth toothpaste, oral rinse, moisturising gel, moisturising liquid, chewing gum, and a dry mouth denture adhesive paste.[26]

3. Acid based substitutes

Acid based dry mouth remedies commonly employ malic (*pyrus malus*), ascorbic (vitamin C), or citric (anhydrous citric) acids. They are commonly used in pharmaceutical formulations as acidifier, as synergist to enhance the effectiveness of antioxidants, and for flavouring.[15] These acids are used in the management of dry mouth due to their gustatory effect. Because of the possibility of demineralization, acid based formulations commonly include

Table 2: Over the counter xerostomia remedies available in Canada

Trade name	Active ingredients	Manufacturer's instructions	Reported side effect	Recommendations
Biotene Oralbalance Moisturising Gel; 1.5 oz (45 ml) Laclede, Inc. Biotene Canada www.biotene.ca	Lactoperoxidase, lysozyme, glucose oxidase, lactoferrin	Use whenever necessary to relieve dryness. Using a clean fingertip, apply a one-half inch ribbon of gel onto tongue, add an additional amount of gel on affected areas, can be massaged into gums. It is safe to swallow excess gel to assist in throat lubrication. Repeat several times daily as needed.	n/a No published scientific evidence of the effects of this product on human dentition was found.	Dentate or edentulous individuals. Complete or partial loss of saliva. Best used at night due to longer retention.
Biotene Oralbalance Moisturising Liquid; 1.5 oz (45 ml) Laclede, Inc. Biotene Canada www.biotene.ca	Lactoperoxidase, lysozyme, glucose oxidase, lactoferrin	Use whenever necessary to relieve dryness. When using the Biotene Moisturizing liquid, squirt directly into the mouth as often as moisture is needed. It is safe to swallow excess liquid to assist in throat lubrication. Repeat several times daily as needed.	n/a No published scientific evidence of the effects of this product on human dentition was found.	Dentate or edentulous individuals. Complete or partial loss of saliva during the day and at night.
Biotene Dry Mouth Antibacterial Toothpaste Original flavour; Antibacterial Gentle Mint Gel; 4.5 oz (125 g) Laclede, Inc. Biotene Canada www.biotene.ca	Lactoperoxidase, lysozyme, glucose oxidase, lactoferrin, Sodium monofluorophosphate	Use in place of your regular toothpaste. Rinse toothbrush in water before applying Biotene. Brush for two minutes, rinse lightly. For best results, use first thing in the morning, after eating, and at bedtime. It is important not to skip brushing because the enzymes in Biotene can fully help give your mouth a healthy balance of bacteria.	n/a No published scientific evidence of the effects of this product on human dentition was found.	Dentate individuals. Complete or partial loss of saliva. Daily use.
Biotene Gentle Mouthwash; 16 oz (474 ml) Laclede, Inc. Biotene Canada www.biotene.ca	Lactoperoxidase, lysozyme, glucose oxidase, lactoferrin	Use 15 ml (one tablespoon). Swish thoroughly for 30 seconds and spit out. If your throat is dry, you may slowly sip one table spoon of Biotène mouthwash two or three times daily.	Enamel demineralization.	Edentulous individuals. Complete or partial loss of saliva during the day.
Biotene Dry Mouth Chewing Gum; 16 pieces/package Laclede, Inc. Biotene Canada www.biotene.ca	Lactoperoxidase, lysozyme, glucose oxidase, lactoferrin, xylitol	Chew one or two pieces, as required, to relieve dry mouth and throat (especially recommended after meals when unable to brush).	Stickiness to the dental prosthesis. Muscle fatigue.	Dentate individuals.
Moi-Stir Spray; 4 oz (120 ml) PendoPharm, Inc. Canada www.pendopharm.com	Carboxymethylcellulose sodium; sorbitol, buffers	Spray 1 or 2 times directly into mouth whenever it feels uncomfortably dry.	Stickiness to the lips at night. Irritation of the oral mucosa. No published scientific evidence of the effects of this product on human dentition was found.	Dentate or edentulous individuals. Complete or partial loss of saliva during the day and at night.
Mouth Kote Oral Moisturizer Spray Bottle (60 ml, 240 ml); or packets – 5 ml, 50 packets/box Parnell Pharmaceuticals, Inc. Canada www.pendopharm.com	Yerba Santa plant extract	Spray into mouth to relieve dry mouth discomfort as needed; may be swallowed or expectorated; shake well before using. Swirl thoroughly in the mouth the content of the packet for 10 seconds, gargle and spit out. Repeat as necessary.	n/a No published scientific evidence of the effects of this product on human dentition was found.	Edentulous individuals. Complete or partial loss of saliva during the day.

Table 2: Over the counter xerostomia remedies available in Canada *(continued)*

Trade name	Active ingredients	Manufacturer's instructions	Reported side effect	Recommendations
Saliva Sure Moisturizing Lozenges; 90/box Scandinavian formulas, Inc. www.scandinavian formulas.com	Polyethylene glycol, dicalcium phosphate, malic and citric acid	Allow one lozenge to move around and slowly dissolve in your mouth. Repeat as necessary. In severe dry mouth cases, one lozenge per hour is recommended.	n/a No published scientific evidence of the effects of this product on human dentition was found.	Edentulous individuals. Partial loss of saliva during the day. Should not be used long term in dentate individuals.
Trident Sugarless Chewing Gum with xylitol, 12 pieces/pkg Cadbury Adams Canada, Inc. www.cadbury.com/Pages/Home.aspx	Petroleum base, sorbitol, xylitol	Chew one piece as often as required.	Stickiness to the dental prosthesis. Muscle fatigue.	Edentulous individuals. Partial loss of saliva during the day.
Extra Sugarless Chewing Gum Wrigley, Inc. www.wrigley.com/wrigley/index.asp	Petroleum base, sorbitol, xylitol	Chew one piece as often as required.	Stickiness to the dental prosthesis. Burning sensation. Muscle fatigue.	Edentulous individuals. Partial loss of saliva during the day.
Aloe Vera gel, Lily of the desert, Inc. www.lilyofthedesert.com	99.5% certified organic aloe vera extract	Use as often as needed to relieve oral dryness.	n/a No published scientific evidence of the effects of this product on human dentition was found.	Dentate or edentulous individuals. Complete or partial loss of saliva. Best used at night due to longer retention.

such electrolytes as sodium fluoride and calcium[15] to aid in rehardening of enamel.[30] Acid based salivary stimulants (Salivix® and Salivin®) showed minimal mineral dissolution and gave considerable but temporary relief of dry mouth symptoms.[8,12,46] Other in vivo studies[46] demonstrated only temporary increase in salivary flow rate,[46] no influence on buffering capacity or oral sugar clearance time, and no effect on oral bacterial count.[12] Thayers® and Saliva Sure® sugar free lozenges are clinically tested equivalents available in Canada, containing electrolytes to protect teeth from demineralization.[47,48] A clinical study on Saliva Sure® was done on a small, unmatched sample, and fully sponsored by the manufacturer, Scandinavian Formulas, Inc.[48] It is important to note that while the above studies evaluated salivary flow rate, bacterial counts, and sugar clearance, the effect of such remedies on enamel was only tested in vitro.

4. Petroleum based substitutes

In addition to the above categories of products, sugar free chewing gum was found to be very effective in patients with residual salivary flow,[12,16,27,32,49–51] being particularly popular in younger, dentate, and haemodialysis patients with restricted water intake in their diet.[9,52] Generally, gum chewing is not associated with side effects; however local irritation, jaw muscle fatigue, adherence to teeth and dental prostheses, and rapid taste loss were reported.[9,32,12] Lowered salivary pH, increased bacterial plaque, and risk of caries were reported with the use of sugar containing chewing gums.[53,54] Trident®, Extra®, and Biotene® are examples of sugarless gum available in Canada.[25]

Recommendations

The most suitable candidates for saliva replacement therapy would be patients with complete loss of salivary function. Remedies with a more viscous consistency such as Biotene® gel, MouthKote® and aloe vera gel are best used during the night, and in patients with dental prostheses.[9,16,17,24,39,44,45] Saliva stimulants, on the other hand, can be used by patients with partial loss of salivary function, for example due to Sjogren's syndrome, diabetes mellitus, HIV associated salivary gland disease, in renal haemodyalisis patients, or patients using medications with xerostomic side effects.[1,5,55,56]

Factors to be considered when recommending a xerostomia remedy

Electrolytes and cariostatic properties

When recommending a particular xerostomia remedy, consider the presence of electrolytes like calcium, phosphate, and fluoride which aid in enamel remineralization. Since the best rehardening of enamel was observed in control solutions containing electrolytes,[30,56] Biotene® Oral Rinse should be avoided in dentate patients.[22] Tablets, lozenges and pastilles containing acids should not be used long term in dentate patients because of the potential demineralizing effect. Electrolytes must be provided in the formula of such products.[30] Sugar free chewing gums containing such sugar alcohols as xylitol, sorbitol, mannitol, and maltitol (e.g. Biotene®, Trident® and Extra®) are recommended in individuals with residual salivary flow and haemodialysis patients due to their gustatory and cariostatic effect.[19,57–60]

Patient friendly packaging

All xerostomia remedies should be easy to carry in convenient packaging for discreet use.[9,37] Moisturizing oral liquids are best delivered in spray can form.[7] Older xerostomic individuals and patients with arthritis may experience difficulties with a pump spray.[37]

Future research recommendations

OTC xerostomia palliation remedies must be clinically tested on patients with xerostomia of various etiologies. Much attention has been focused on head and neck cancer patients, whereas haemodialysis, Sjogren's syndrome, and AIDS patients as well as patients on xerostomia inducing medication have not been significantly represented in the scientific literature. More randomized, placebo controlled, double blind studies on xerostomia remedies are needed.

CONCLUSION

Xerostomia remedies are available in a variety of forms, compositions and sizes. The selection of dry mouth remedies is greatly dependent on the etiology of xerostomia and its severity, the presence of dentition, and social acceptance norms. Substantivity, protective qualities (lubrication, antimicrobial properties, remineralization and buffering), acceptable taste, cost, convenient packaging, and ease of use influence patient's acceptance of a product. It is important that a patient with dry mouth be given a chance to test several different xerostomia remedies. Patients with chronic xerostomia should be educated on its impact on oral health, the available OTC xerostomia products, and the need for regular professional care.

This review of OTC xerostomia remedies was based on an exhaustive search of literature representing various studies which differed in design, materials and methods, strength of scientific evidence, and applicability. Many of the OTC xerostomia remedies currently available in Canada have few studies to support their use. There is a need for more rigorously designed clinical studies and exploration into new avenues to manage xerostomia.

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   b. **Revue de la littérature :** Contexte (sujet ou procédure examinés); Méthodes (stratégie suivie, avec données de base); Résultats et discussion (constatations et analyse de la documentation); Conclusion (ce que les auteures ont tiré de l'analyse).
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l'approbation de chaque étude par un comité de déontologie, conformément à l'*Énoncé de politique des trois Conseils : Éthique de la recherche*, 1998 (avec les modifications de 2005) ou la Déclaration d'Helsinki. Les éditeurs se réservent le droit de refuser un article s'ils doutent que la procédure appropriée ait été suivie. **Résultats :** Suite logique selon la méthode utilisée. Les données tabulaires devraient comprendre les statistiques des tests pertinents fondés sur les tests statistiques utilisés. **Discussion :** Interprétation des travaux à la lumière des autres travaux déjà publiés dans l'aire de recherche. Elle devrait souligner la contribution de l'étude à la pratique de l'hygiène dentaire ainsi que ses limites. **Conclusions :** Tirées de l'ensemble de l'étude originale dans le contexte de la littérature sur le thème étudié. On peut aussi souligner d'autres aires de recherches futures pour soutenir le développement des connaissances dans le secteur.

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c. **Exposé de principe :** L'organisme soutenant l'énoncé doit être indiqué visiblement. Structure ouverte avec sous-titres selon la pertinence au sujet traité.

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7. **Données et tableaux :** Présentation en format Excel ou Word. Ces tableaux et données peuvent aussi être inclus à la fin du document Word.

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9. **Information supplémentaire :** Toute information supplémentaire doit être fournie dans son format définitif, car elle ne sera pas corrigée et paraîtra en ligne exactement comme elle aura été présentée. Veuillez vous renseigner auprès de la Rédaction avant d'envoyer des fichiers de plus de 1 Mbit.

   L'information supplémentaire est une matière évaluée par les pairs, qui a directement rapport avec les conclusions de l'article mais qui ne peut être incluse dans la version imprimée à cause des contraintes d'espace ou de format. Elle est affichée dans le site Web du journal et rattachée à l'article quand celui-ci est publié et peut comprendre du texte additionnel, des illustrations, des vidéos ou des tables exhaustives. Les sources d'information supplémentaire doivent être indiquées dans le texte et l'on doit faire parvenir à la Rédaction l'autorisation de s'en servir en même temps que la soumission.

10. **Style des références et citations :** La présentation des références s'inspire du style Vancouver, le préféré des journaux médicaux. Le style Vancouver est ainsi appelé parce qu'il a été mis au point par un groupe de travail qui avait tenu sa première réunion à Vancouver en 1978 et qui est devenu par la suite le Comité international d'éditeurs de journaux médicaux (CIEJM).

Les références devraient être numérotées dans l'ordre où elles sont citées dans le texte. Une référence citée plus d'une fois dans un même texte conservera toujours son numéro et l'auteur en fera rappel en utilisant des adverbes ou abréviations telles que *op cit*, *ibidem* ou *ibid*. On utilisera des chiffres arabes en exposant pour identifier les références dans le texte (e.g. [1,2] ou [3–6]). La liste de la section Références suivra l'ordre numérique paraissant dans le texte.

Le style a été mis au point par la *US National Library of Medicine (NLM)* et adopté par le CIEJM dans le cadre de ses '*uniform requirements for manuscripts submitted to biomedical journals*' (exigences d'uniformité pour les manuscrits soumis aux journaux biomédicaux) : < http://www.nlm.nih.gov/bsd/uniform_requirements.html >.

Samples

Journal articles

Standard article

Orban B, Manella VB. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontal*. 1956;27:120-35.

Volume with supplement

Orban B, Manella VB. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontal*. 1956;27 Suppl 7:S6-12.

Conference proceedings – abstract

Austin C, Hamilton JC, Austin TL. Factors affecting the efficacy of air abrasion [abstract]. *J Dent Res*. 2001;80(Special issue):37.

Organization as author

Canadian Dental Hygienists Association. Policy framework for dental hygiene education in Canada. *Probe*. 1998;32(3):105-7.

Books and other monographs

Personal authors

Hooyman NR, Kiyak HA. *Social gerontology: a multidisciplinary perspective*. 6th ed. Boston: Allyn & Bacon; 2002.

Editors as authors

Cairns, J Jr, Niederlehner BR, Orvosm DR, editors. *Predicting ecosystem risk*. Princeton (NJ): Princeton Scientific Publications; 1992.

No author

What is your role in the profession [editorial]? *J Dent Topics*. 1999;43:16-7.

Chapter in book

Weinstein L, Swartz MN. Pathological properties of invading organisms. In: Soderman WA Jr, Soderman WA, editors. *Pathological physiology: mechanisms of disease*. Philadelphia: WB Saunders; 1974;457-72.

Conference paper

Calder BL, Sawatzky J. A team approach: providing off-campus baccalaureate programs for nurses. In: Doe AA, Smith BB, editors. Proceedings of the 9th Annual Conference on Distance Teaching and Learning; 1993 Sep 13-15; Ann Arbor, MI. Madison (WI): Ann Arbor Publishers; 1993;23-26.

Scientific or technical report

Murray J, Zelmer M, Antia Z. *International financial crises and flexible exchange rates*. Ottawa: Bank of Canada; 2000 Apr. Technical Report No. 88.

Personal communication

These should be cited in parentheses in the body of the text. The author should obtain permission from the source to cite the communication.

Other publications

Newspaper article

Rensberger B, Specter B. CFCs may be destroyed by natural process. *Globe and Mail*. 1989 Aug 7;Sect. B:24.

Audiovisual

Wood RM, editor. *New horizons in esthetic dentistry* (videocassette). Chicago: Chicago Dental Society; 1989.

Unpublished material

Smith A, Jones B. The whitening phenomenon. *J Nat Dent*. (Forthcoming 2004)

Electronic material

Monograph on Internet

National Library of Canada. *Canadiana quick reference* [monograph on the Internet]. Ottawa: The Library; 2000 [cited 2003 Nov 30]. Available from: www.nlc-bnc.ca/8/11/index-e.html

Journal on Internet

Walsh MM. Improving health and saving lives. *Dimensions Dent Hyg* [serial on Internet] 2003 Nov/Dec [cited 2004 Jan 12]:[about 7 p.]. Available from: www.dimensionsofdentalhygiene.com/nov_dec/saving_lives.htm

Homepage/web site

Canadian Dental Hygienists Association [homepage on the Internet]. Ottawa: CDHA; c1995 – [cited 2003 Nov 20]. Available from: www.cdha.ca

(Révisée novembre 2007)

Educational Resources Order Form

All educational resources are bilingual; the fact sheets and brochures are in English on one side and in French on the other. To order, complete this order form and fax it to CDHA at 613.224.7283. Orders will be shipped via Canada Post (expedited parcel or Purolator courier–ground) depending on package dimensions. Orders will not be shipped to P.O. boxes. Please allow up to 4 weeks for processing and delivery.

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	Cost	Quantity	Total
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Mouthguards protect more than your mouth	$10.00		
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THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE DES HYGIÉNISTES DENTAIRES

Bon de commande de ressources éducatives

Toutes les ressources éducatives sont bilingues; les feuillets d'information et les brochures sont en anglais d'un côté et er français de l'autre. Pour commander, accédez au site Web de l'ACHD pour télécharger le bon de commande, remplissez-le et télécopiez-le au 613-224-7283. Les commandes seront expédiées soit par Postes Canada (colis accélérés, soit par Purolator–service routier) selon les dimensions du colis. Les commandes ne seront pas expédiées aux boîtes postales. Veuillez allouer jusqu'à 4 semaines pour le traitement et l'expédition de la commande.

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Ville : **Province :** **Code postal :**

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Brochures — (25 brochures par paquet)			
La santé buccodentaire et votre hygiéniste dentaire	12,50 $		
La santé buccodentaire et les maladies cardiovasculaires	12,50 $		
La santé buccodentaire et le diabète	12,50 $		
La santé buccodentaire et les maladies pulmonaires	12,50 $		
La santé buccodentaire et le brossage des dents, l'utilisation de la soie dentaire et le rinçage de la bouche	12,50 $		
Des services encore plus accessibles et variés	12,50 $		
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*Disponible aux programmes en hygiène dentaire qui sont sur la liste du site Internet de l'ACHD
http://www.cdha.ca/content/~fr_carrieres/programmes_hygiene_dentaire.asp

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THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
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Smile
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Smile! The Tooth and Nothing but the Tooth

A unique journey into the world of teeth, dentistry and the care for one of our body's most important part! Visitors will go through the history of dentistry and dental care. They will also understand the close link that we have with animals and will be amazed at the importance of teeth for our health.

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Une exposition itinérante unique sur le monde des dents, leurs fonctions, les étranges similitudes avec les animaux, la santé et l'hygiène buccale. Une expérience interactive unique pour les adultes, les enfants et les professionnels de l'hygiène buccale.

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2008
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Upcoming dates and locations for 2009 are:

Voici les dates et les sites hôtes pour 2009:

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Winter 2009
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Quebec City, QC. Summer 2009

New Brunswick Museum
Exhibition Centre
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1-888-268-9595
Fall 2009

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Québec J1H 1K1
Téléphone : 819 564-3200
Sans frais : 1 877 434-3200
www.naturesciences.qc.ca

Health and safety alerts

CDHA staff

Health and safety precautions are prioritized when we travel overseas. How often do we check on what is happening in our own backyards? Health and safety alerts are a reliable way of disseminating crucial information to the public. Add the links given below to your "Favourites" for easy and handy access to health and safety news updates.

http://www.promedmail.org/

ProMED-mail is an online reporting system on health issues related to outbreaks of infectious diseases and toxins around the world. ProMED-mail, the Program for Monitoring Emerging Diseases, is a program of the International Society for Infectious Diseases (ISID). Goals of ISID are to:

- Increase the knowledge base of infectious diseases through research and enhance the professional development of individuals in this discipline.
- Extend and transfer technical expertise in infectious diseases and microbiology.
- Create and foster partnerships for the control and cost effective management of infectious diseases around the world.

Subscribe to ProMed Mail
http://www.isid.org/promedmail/subscribe.lasso

http://brainblogger.com/

This project is an official undertaking of the **Global Neuroscience Initiative Foundation** (GNIF)—a major international non profit charity organization for the advancement of neurological and mental health patient welfare, education, and research.

Brain Blogger covers topics from multidimensional, biopsychosocial perspectives. It reviews the latest news and stories related to neuroscience, psychiatry, and neurology.

http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/index-eng.php

Health Canada provides timely information on issues that concern the health of Canadians using four types of risk communications products:

- Public advisories
- Public warnings
- Information updates, and
- Foreign product alerts.

http://www.inspection.gc.ca/english/corpaffr/recarapp/recaltoce.shtml

Canadian Food and Inspection Agency (CFIA) issues notifications on food recalls and alergy alerts.

CFIA's plans and strategies are to:

- Minimize and manage public health risks associated with the food supply and transmission of animal disease to humans.
- Ensure a safe and sustainable plant and animal resource base.
- Contribute to consumer protection and market access based on the application of science and standards

Subscribe to notification services directly: http://www.inspection.gc.ca/english/tools/listserv/listsube.shtml?foodrecalls_rappelsaliments

http://www.hon.ch/Global/

Health on the Net (HON) was one of the very first URLs to guide both lay users and medical professionals to reliable sources of healthcare information in cyberspace. The Swiss based HON has grown to one of the most respected, not for profit portals to medical information on the Internet.

http://www.johnshopkinshealthalerts.com/alerts/

This free public service from **Johns Hopkins Medicine** helps keep you up to date on the latest breakthroughs for the most common medical conditions which prevent healthy aging.

http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/

This web site of **Public Health Agency of Canada** is a repository of health information on infectious diseases, chronic diseases, travel health, immunization and vaccines, emergency preparedness and response, health promotion, injury prevention, research and statistics.

http://www.safecanada.ca/

SafeCanada.ca links to information and services on public safety in Canada, and covers subjects from school safety to cyber safety, health protection to financial safety.

Local public health alerts

Tune in locally to alerts in your province, your city, your neighbourhood. Listed below are a few sites as examples:

Ottawa: http://www.ottawa.ca/residents/health/alerts/index_en.html

Victoria: http://www.viha.ca/mho/public_health_alerts/

Sudbury: http://www.sdhu.com/content/news/?lang=0

New Brunswick: http://www.gnb.ca/0053/water/alerts-e.asp

Hastings and Prince Edward counties: http://www.hpechu.on.ca/applications/web_cms/index.php?pageid=339&menuid=1510

Mount Allison: http://www.mta.ca/health/health_alerts.html

CDHA posts health alerts either through timely electronic broadcasts to all its members, or publishes information in these pages, as well as on the web site at http://www.cdha.ca/content/newsroom/safety_alerts.asp

CDHA welcomes your feedback: journal@cdha.ca

CLASSIFIED ADVERTISING

CDHA and *CJDH* are not responsible for classified advertising, including compliance with any applicable federal and provincial or territorial legislation.

ALBERTA

WHITECOURT *Name/practice:* Family dental health. *Position available:* Full time dental hygienist. *Position description:* Full time dental hygienist for well established dental practice in Whitecourt, Alberta. *Contact:* Dr. Buduroi, Box 1049, Whitecourt, AB T7S 1N9, Canada. Fax or e-mail résumé. *Tel:* 780-778-4646; *Fax:* 780-779-2609; *E-mail:* danabuduroi@hotmail.com

NOVA SCOTIA

HALIFAX *Name/practice:* Dental Hygienist Restorative/General Practice. Mark Sutherland. *Position available:* Full time dental hygienist. *Position description:* Required for maternity leave from 1 March 2009 to 1 March 2010. It is possible to have two part time dental hygienists to make this work. Hours are Monday–Thursday, 8:00 a.m. to 5:00 p.m. *Contact:* Mark Sutherland. 1528 Robie Street, Halifax, NS B3H 3E4, Canada. *Tel:* 902-425-3806; *Fax:* 902-444-4102; *E-mail:* marksutherland@eastlink.ca

CDHA classifieds

CDHA classified advertisements are listed on www.cdha.ca >Members Only>Career Centre>Employment Opportunities>All/ by province. Online advertisers can post their advertising in the *Canadian Journal of Dental Hygiene* for an additional fee. For pricing details, visit http://www.cdha.ca/content/corporate_opportunities/hire_a_hygienist.asp

CDHA classified advertising reaches more than 14,000 members across Canada, ensuring that your message gets to a target audience of dental hygienists in a prompt and an effective manner. Contact CDHA at info@cdha.ca or 1-800-267-5235 for more information.

Advertisers' index

News – continued from page 67

New CDHA Education Advisory Committee

CDHA provided assistance to Dental Hygiene Educators Canada (DHEC) in changing its organizational structure. CDHA's new Educational Advisory Committee (EAC) has replaced DHEC. The mission of the EAC is to support CDHA by providing the expertise and guidance that will cultivate the development of dental hygiene education and foster the profession's evolution. This new organizational structure will result in improved communication networks for dental hygiene educators, more professional development opportunities related to dental hygiene education, increased networking between educators, and more opportunities to create new educational policies for dental hygiene education. Stay tuned for more information as the committee rolls out its plan for the next year. Information on the EAC and its volunteers on the committee are available online at: http://www.cdha.ca/members/content/policy&action/advisory_committees.asp

Letters to the editor – continued from page 50

services that day. Independent dental hygiene has opened up so many doors and opportunities that may never have been available to me. I love this profession more and more every day.

Yours for overall health,
Deborah Steacy, RDH
Kingston Dental Hygiene
656 Progress Avenue
Kingston, ON K7M 4W9
e-mail: kingstondentalhygiene@cogeco.ca

19–25 April 2009 is National Dental Hygienists Week™

ABOUT THE COVER

The outer front covers in issues of volume 43 in 2009 feature "**Independent Practices**", supporting the spirit of entrepreneurship in dental hygienists who have broken ground to establish their own practices in Canada. This picture was one among the entries selected for the competition advertised between October and December 2008. Volume 43.2, March-April 2009. Photo credit: ©CDHA. Reproduced with the permission of Melanie Johnston-Dore and Kimberley Ehrman.

Edge Dental Hygiene Centre, Calgary

The Edge Dental Hygiene Centre opened its doors on 1 November 2007 as Calgary's first dental hygiene clinic. It is equipped with three operatories, digital x-rays, Periowave laser, VELscope oral cancer screening, and Sapphire professional whitening. Two sisters, Melanie and Kimberley, graduates of Dalhousie University, combined their knowledge, business skills, and dreams to help over a thousand clients since setting up their independent practice, and enjoy all the challenges and rewards. Clients appreciate the excellent care and freedom of choice, and most dentists have been very supportive of their business venture. http://www.edgehygiene.com