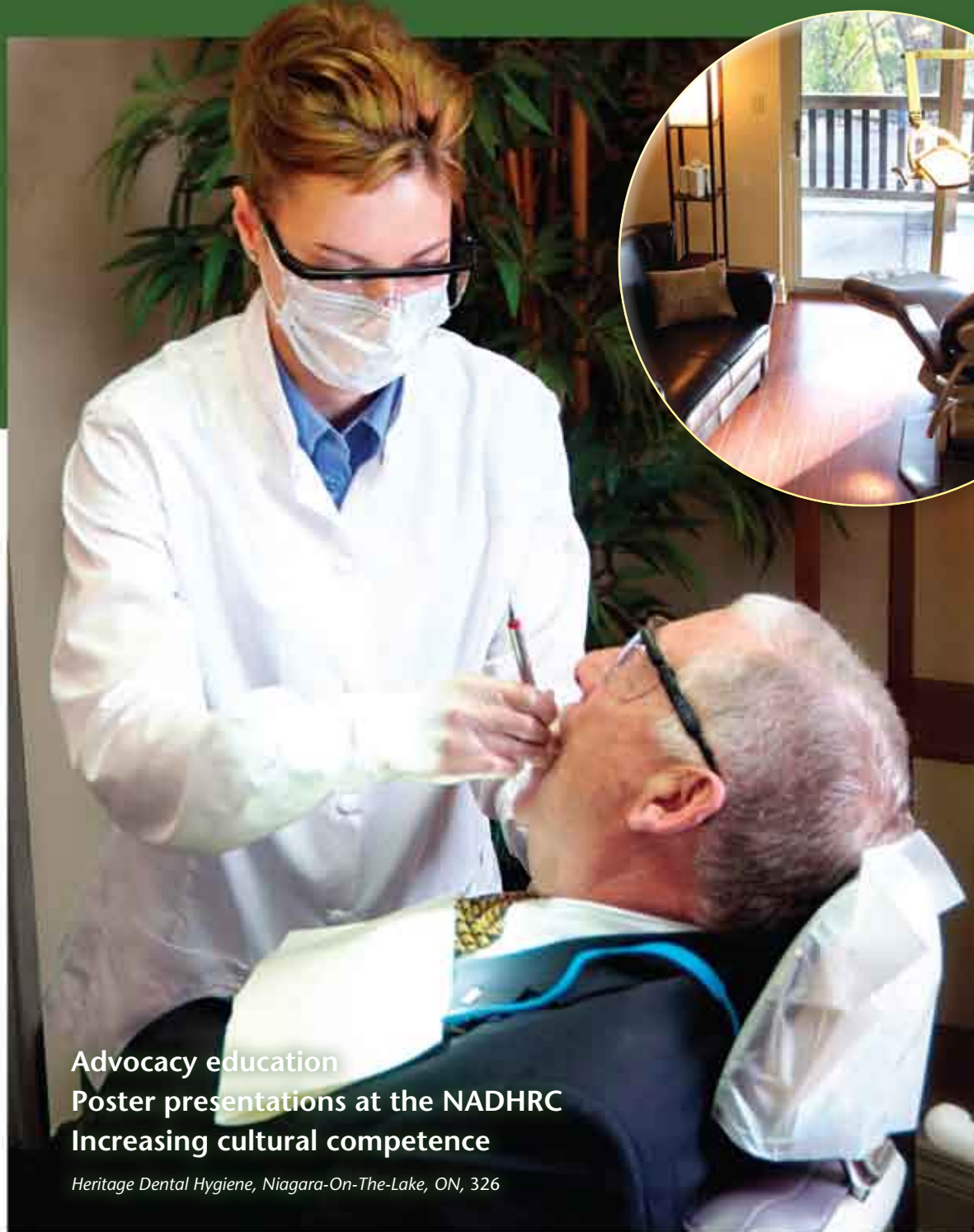


CANADIAN JOURNAL OF DENTAL HYGIENE · JOURNAL CANADIEN DE L'HYGIÈNE DENTAIRE

CJDH JCHD

NOVEMBER–DECEMBER 2009, VOL. 43, NO. 6



Advocacy education
Poster presentations at the NADHRC
Increasing cultural competence

Heritage Dental Hygiene, Niagara-On-The-Lake, ON, 326

THE OFFICIAL JOURNAL OF THE CANADIAN DENTAL HYGIENISTS ASSOCIATION

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Influences of change

I feel privileged to write my first message to you as President of the Canadian Dental Hygienists Association. I also feel honoured to hold this position. Twenty four years ago when I graduated from the dental hygiene program at the University of Alberta, I joined CDHA and have been a member every year since. I believe that this connection is the most value added membership that Canadian dental hygienists can have. Why?

It's simple. Who would not want to belong to the most recognized collective voice of dental hygiene in Canada? Along with numerous member benefits, CDHA is the source for access to professional publications and evidence based position papers.

Evidence based research has become the key word for dental hygienists. We know that dental hygiene practice consistently evolves to include new technology, new clinical techniques, new practice settings, and new interpretations of what preventive dental hygiene care should look like.

How many of us embrace evidence based research, and are able to translate it into our own daily practices? I believe that the challenge for dental hygienists to be truly autonomous is to advance our profession by interpreting evidence based research into dental hygiene care.

I consider this question myself on almost a daily basis. As an independent dental hygiene practitioner, it is my sole responsibility to perform dental hygiene care under the guidelines of my regulatory body, and to provide dental hygiene care based upon current models of care using evidence based research. Yet, it is so easy to do as we have always done especially in a busy practice setting where every minute of our day is designed. I believe it takes intention, planning, patience, and great communication to transition from a place where we practise in the same manner as always, to a place where we practise dental hygiene with an openness to change.

As Stephen Covey says, "We may be very busy, we may be very efficient, but we will also be truly effective only when we begin with the end in mind." I love this quote because it inspires me to visualize the "ends" in my professional and personal life. And I encourage you to visualize how you can use evidence based research as a stimulus for change in your daily professional life.

The CDHA Board of Directors is a very committed and inspired group of dental hygienists from across Canada that always has the "ends" in mind. It is this vision which moves our organization forward and it is this vision which inspires us in our roles as directors.

Now is the time of year to renew membership in our national organization, CDHA, and to reflect on how we, as dental hygienists, influence change within our own environment. ©CDHA



Jacki Blatz,
RDH

L'influence du changement

C'est pour moi un privilège de rédiger ce premier message à titre de présidente de l'Association canadienne des hygiénistes dentaires. C'est aussi un honneur d'occuper ce poste. Il y a vingt-quatre ans, jeune diplômée du programme d'hygiène dentaire de l'Université de l'Alberta, je joignais les rangs de l'ACHD à laquelle je renouvelle mon adhésion à tous les ans depuis. Je crois que c'est le lien le plus précieux qu'ont les hygiénistes dentaires canadiens.

Pourquoi?

C'est simple. Qui ne voudrait pas appartenir à la voix collective la plus reconnue en hygiène dentaire au Canada? Outre les nombreux avantages qu'elle offre à ses membres, l'ACHD est une source d'accès aux publications professionnelles et à des énoncés de principe fondés sur des données probantes.

La recherche factuelle est devenue le mot clé des hygiénistes dentaires. Nous savons que la pratique de l'hygiène dentaire évolue constamment, intégrant les nouvelles technologies, les nouvelles procédures cliniques, les nouveaux encadrements et les nouvelles perceptions des soins de prévention en hygiène dentaire.

Combien d'entre nous embrassent la recherche factuelle et peuvent l'appliquer dans notre pratique quotidienne? Je crois que pour les hygiénistes dentaires le défi d'une véritable autonomie porte sur l'avancement de notre profession en interprétant les données de la recherche factuelle aux soins d'hygiène dentaire.

Je me pose moi-même la question presque à tous les jours. En tant que praticienne autonome en hygiène dentaire, c'est à moi seule qu'incombe la responsabilité de suivre les directives de mon organisme de réglementation dans l'exercice de ma profession et de dispenser mes soins d'hygiène dentaire selon les modèles de soins courants, basés sur la recherche factuelle. Néanmoins, il est si facile d'agir comme auparavant, surtout un milieu de pratique fort occupé où chaque minute est programmée. Je crois qu'il faut de la détermination, de la planification, de la patience et une intense communication pour passer d'une pratique traditionnelle à un cadre de pratique de l'hygiène dentaire ouvert au changement.

Comme le dit Stephen Covey, « On peut être fort occupé et très efficace. On ne sera vraiment efficace que si l'on a au départ un but en tête. » (Notre traduction). J'aime cette citation parce qu'elle m'incite à visualiser les « buts » de ma vie professionnelle et personnelle. Et je vous encourage à voir comment vous pouvez utiliser la recherche factuelle pour vous stimuler au changement dans votre vie professionnelle quotidienne.

Le conseil d'administration de l'ACHD est un groupe très engagé et inspiré d'hygiénistes dentaires de partout au Canada qui a toujours des « buts » en tête. C'est cette vision qui fait avancer notre organisation et nous inspire dans notre rôle de membres du conseil.

Le moment est venu de renouveler notre adhésion annuelle à notre organisation nationale, l'ACHD, et de réfléchir sur les moyens d'influer, en tant qu'hygiénistes dentaires, sur le changement dans notre propre environnement. ©CDHA

Jacki Blatz

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CONTENTS



THE CANADIAN DENTAL
HYGIENISTS ASSOCIATION
L'ASSOCIATION CANADIENNE
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EVIDENCE FOR PRACTICE

Societal conditions driving the need for advocacy education in dental hygiene <i>EM Edgington, JFL Pimlott, SJ Cobban</i>	267
North American Dental Hygiene Research Conference proceedings: poster presentations	275
Increasing cultural competence in the dental hygiene profession <i>CJ Charbonneau, MJ Neufeld, BJ Craig, LR Donnelly</i>	297

DEPARTMENTS

President's message de la présidente <i>Influences of change/L'influence du changement</i>	259
Executive Director's message de la directrice générale <i>Ends/Les buts</i>	263
Editorial <i>It's all about curiosity and collaboration</i>	264
<i>Emerging dental hygienists' communication: Part 1</i>	265
Letters to the editor	266
News	287–289
Expanding knowledge and seizing new opportunities	290
Research Corner	294
CDHA Matters	295
Independent practice <i>How are we doing? Where do we go from here?</i>	319
Library column <i>Elder abuse and neglect: role of dental hygienists</i>	323
Probing the Net <i>Social responsibility: perspectives of professional groups</i>	324
Advertisers' index	326

INFORMATION

Educational Resources	286
Together — let's reach higher	289
2010 Dental Hygiene Programs Recognition Award	294
CDHA webinar watch	296, 315
Indexes	316–317
Stay Connected: on the journal's front cover in 2010	320
CDHA Dental Hygiene Recognition Program	321–322
Professional Development Opportunities	325
CDHA Community Calendar	326

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Ends

You've done it before and you can do it now. See the positive possibilities. Redirect the substantial energy of your frustration and turn it into positive, effective, unstoppable determination.

Ralph Marston

This issue's content draws the spotlight on international research, societal pressures on dental hygiene education, and cultural competence in the profession that collectively demonstrates the connectedness of individual dental hygienists within the professional and global community. Connectedness expands the pool of thought and action; and reflecting on the past year, there are two such frustrations churning the waters in the dental hygiene community. The first is the saturation of the employment market, and the second is assurance of quality professionals emerging from the educational system.

Saturation of the dental hygiene employment market is reducing the availability of employment; a trend that impacts the daily life of many of our members. CDHA, regulatory authorities, and the Ontario government are taking action to address this issue. The Ontario Ministry of Training, Colleges and Universities oversees the educational system in Ontario, including private schools. The Ontario government has taken action on two fronts; a moratorium on the establishment of new private schools, and a new 3-year window whereby any non accredited program that has not achieved accreditation by December 2012 will lose its registration as a dental hygiene program. This may result in a few school closures in the pursuit of accreditation standards.

CDHA takes a strong role in the protection and evolution of the dental hygiene profession. We are on the verge of releasing two important documents which speak to the leadership that CDHA provides for the profession. The first document, *CDHA Education Agenda: Pathways to Oral Health*, calls for a bachelor's degree as entry to practice. The second document, research oriented *Dental Hygiene at a Crossroads: Knowledge Creation and Capacity Building in the 21st Century*, calls for strengthening the research capacity of dental hygienists. In order to do this, we will need to establish master level degree programs in dental hygiene in Canada. This is the only way for dental hygienists to substantially build upon their specialized body of knowledge. In addition, CDHA has worked together with a consortium of other dental hygiene organizations to create a *National Competencies* document, which will also be released later this year, and will form the basis of educational curricula. These documents provide the foundation for advocacy much in the same way evidence based practice informs dental hygiene practice.

CDHA is working with the regulatory bodies to advocate

...continued on page 326

CDHA welcomes your feedback: info@cdha.ca



Dr. Susan A. Ziebarth

Les buts

Vous l'avez fait auparavant et vous pouvez le faire maintenant. Regardez les possibilités positives. Redirigez l'énergie substantielle de vos frustrations vers une véritable et irrésistible détermination positive.

Ralph Marston

La teneur du problème met en lumière la recherche internationale, les pressions sociales sur l'éducation en hygiène dentaire et l'aptitude culturelle de la profession à démontrer collectivement le lien individuel des hygiénistes dentaires dans la profession et la collectivité en général. Ce lien élargit la mise en commun d'idées et d'actions et, si l'on songe à l'année dernière, deux frustrations font bouillonner la communauté de l'hygiène dentaire. La première est la saturation du marché de l'emploi et la seconde, l'assurance des qualités professionnelles émergeant du système d'éducation.

La saturation du marché de l'emploi en hygiène dentaire réduit la disponibilité des emplois et cette tendance affecte la vie quotidienne de beaucoup de nos membres. L'ACHD, instance de régulation, et le gouvernement de l'Ontario abordent vivement le problème. Le ministère de la formation et des collèges et universités surveille le système d'éducation de l'Ontario, y compris les écoles privées. Le gouvernement ontarien est intervenu sur deux fronts : un moratoire sur l'établissement de toute nouvelle école privée et une nouvelle fenêtre de 3 ans par laquelle tout programme non agréé qui n'aura pas renouvelé son agrément avant décembre 2012 perdra son inscription de programme d'hygiène dentaire. Cela pourrait signifier la fermeture de quelques écoles en application des normes d'agrément.

L'ACHD assume un rôle important dans la protection et l'évolution de la profession de l'hygiène dentaire. Nous sommes sur le point d'émettre deux documents importants qui soutiennent le leadership de l'ACHD auprès de la profession. Le premier, le Programme d'enseignement de l'ACHD : Voie de la santé buccale, demande un baccalauréat pour exercer la profession. Le second, qui porte sur la recherche, L'hygiène dentaire à la croisée des chemins : Création du savoir et capacité de bâtir au 21^e siècle, demande de soutenir la capacité de recherche et de développement des hygiénistes dentaires. Pour y arriver, il faut créer un programme de maîtrise en hygiène dentaire au Canada. C'est la seule façon pour les hygiénistes dentaires de bâtir sur la somme de leur savoir spécialisé. En outre, l'ACHD travaille en consortium avec d'autres organisations d'hygiène dentaire à la rédaction d'un document sur Les compétences nationales, qui sera diffusé plus tard cette année et servira de base à un programme d'enseignement. Tous ces documents procureront un fondement à l'intervention comme le font les données probantes tirées de la pratique pour l'exercice de l'hygiène dentaire.

L'ACHD travaille avec les organismes de réglementation à la mise en place d'un mécanisme pour permettre aux autorités de maintenir des normes élevées en regard de la loi de 2009 sur le commerce intérieur, qui compromet la capacité de rejeter les

...suite page 320

L'ACHD accueille vos commentaires : info@cdha.ca

It's all about curiosity and collaboration



Susanne Sunell, RDH, EdD
Scientific Editor, *Canadian Journal of Dental Hygiene*
Canadian Dental Hygienists Association



Rebecca S. Wilder, RDH, MS
Editor in Chief, *Journal of Dental Hygiene*
American Dental Hygienists' Association

Dental hygienists from across the United States, Canada, and Europe came together 15–17 June this year to explore questions, and to discuss how we could all work together to expand our knowledge about dental hygiene research. One hundred and fifty dental hygienists travelled to Washington, D.C., to talk about the future of our profession, the newest oral care technologies, the latest evidence linking oral health to systemic health, access to oral health care, and many more topics. It was all about curiosity and collaboration.

Our common curiosity spurred us to explore a wide range of issues as is evident from the work found in the poster presentations highlighted in this issue of the *Canadian Journal of Dental Hygiene*. The proceedings reflect the collaboration of two national organizations as well as collaborations among researchers. This issue provides an overview of our collaborative research conference; however, the influence of the conference was greater than the sum of its various presentations. The conference provided diverse opportunities to make connections with others. Participants explored ways they could collaborate to further investigations and to explore areas of mutual interest in a more comprehensive way. It was all about sharing and expanding the horizons of our research to support the oral health of our societies. It was about building collaborations to more effectively use scarce resources in the best interests of the public.

Through this issue of the journal we would like to extend these connections to our members, the dental hygienists of North America, who have an equal sense of curiosity and a desire to collaborate. Our curiosity is a characteristic that brings us together regardless of the work setting; it underpins the relationship between research and practice.

The questions we are exploring arise from you, the dental hygienists, working with clients—be they individuals, families, groups, or communities. The work of researchers is to take the questions that you identify, and shape them into realistic and relevant research questions that can be explored in a systematic way. This is the foundation of our collaboration. You stimulate the questions, and we attempt to find ways to provide you with insights that will support client safety and better oral health outcomes.

We are now extending to you, our members, an opportunity to foster additional collaborations. We hope that your curiosity will stimulate your interest in reading this issue of the *Canadian Journal of Dental Hygiene*, and that it will initiate further communication with researchers so that we can work collaboratively to meet the oral health needs of people throughout the world. Working together, we can achieve so much more. ©CDHA

Sincerely,
Susanne Sunell, RDH, EdD
Scientific Editor, *Canadian Journal of Dental Hygiene*
Canadian Dental Hygienists Association

Rebecca S. Wilder, RDH, MS
Editor in Chief, *Journal of Dental Hygiene*
American Dental Hygienists' Association



Acknowledgements from the Canadian Dental Hygienists Association

CDHA gratefully acknowledges the copyright holder, the American Dental Hygienists' Association, for permissions to jointly produce and publish these poster presentations of the North American Dental Hygiene Conference proceedings in this issue of the journal.

Emerging dental hygienists' communication: Part 1

Dr. Ronald L Shafer, CDHA Director of Technosocial Integration

Navigating the Imagination, CDHA's leadership event in May 2008, put into motion a monumental effort to transform the CDHA website from the traditional web offering into a powerful dental hygienists' membership benefit, as many attending the event wanted a more robust web offering.

CDHA collected this information, and went about an 18-month analysis, design, creation, and implementation of a new state-of-the-art membership management system. The upgrades were also to such key components as social networking, research, event management, mentorship, educational and membership product system. This system is a portal to the future of dental hygienists' communication.

As with all endeavours of such magnitude, the portal had to be implemented in phases. Each phase had to be designed, programmed, tested, and implemented. With implementation, is the ongoing testing to get the best fit. Phase One, launched on 1 October 2009, is presently being refined and perfected. Due to identified urgencies, CDHA decided that Phase One should provide for a new membership management system, the core base of social networking (wikis, blogs, and forums), webinar production, industry partners' product boutique, and an educational system upgrade.

This four part series is intended help CDHA members understand the elements of social networking, and how these elements will benefit the profession of dental hygienists. Following the discussion on social networking, is a discussion on the CDHA educational and library system, CDHA webinar system, and the CDHA research and mentorship systems. Each of these discussions will be posted on the CDHA website after publication in the *CJDH*.

Social networking

Many of you have heard of, or use, MySpace, Facebook, and Twitter. These are global social networking sites used by millions of people. CDHA's social networking comprises wikis, blogs, and forums.

Wiki: Wikis are primarily used for collaboration and knowledge management. The term "wiki" was coined in an effort to create a non descriptive label for a community managed website. The original term came from the Hawai-

ian word for "hurry up", with a recent back acronym of "What I Know Is". CDHA's Wiki will be managed by the dental hygienist community. It is envisioned to become "What I Know About Dental Hygiene Is". When visiting the Community Tab on the CDHA website, explore wikis, and start innovating.

Blog: The replacement of the newspaper has arrived, and it is called a "blog". The name is derived from a contraction of the term "weblog". Blogs started out being individual journals. Blogs are becoming even more sophisticated with graphics, videos, and commentary. Many organizations are using blogs as their organizational newsletter. At CDHA, blogs could be for provincial associations, independent practice, educators, students, individuals, and even for school associations. The dental hygienist community itself will determine what blogs are needed, and maintained. Visit the Community Tab on the CDHA website, and explore blogs, and start blogging.

Forum: Topical forums are maintained by a forum moderator, and concentrate on specific dental hygiene topics, such as oral cancer, independent practice issues, educational issues, new dental hygiene methods and processes, and research issues to name just a few. Again, this tool is community driven and will be as good as the community makes it. Just as you did for wikis and blogs, visit the Community Tab on the CDHA website, and explore forums.

Groups: Groups can be formed to categorize wikis, forums, and blogs to the interest of certain groups. Examples could be provincial and type of practice to name just a few. Formation of groups can be found under the Community Tab on the CDHA website.

This article barely scratches the surface of the value of the new offering of these communication tools. The forthcoming and subsequent parts of this series will highlight more new communication tools. CDHA is striving to bring cohesion to the very dynamic and exciting professional community of dental hygienists. The more we share our knowledge and information in a timely and an accurate basis, the better the profession and its individuals. ©CDHA

CDHA welcomes your feedback: rshafer@cdha.ca



'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

Dear editor:

Healthy Living Program in El Porvenir, Honduras

"Le duele?"... "Does it hurt?" ... the one question we learned to ask by the end of our first day in Honduras. Many of the 251 children in grades 4, 5, and 6 would shake their heads even though they would win. Our dental team vowed to make sure that by the end of our week there, the children would change their minds about how they felt on the subject of dental treatments.

In March 2009 we—two dental hygiene students at George Brown College—were given the opportunity to travel to El Porvenir, Honduras, for a week. There, partnering with Dr. William Kerr, Lisa Stoughton, RDH, dentist Bernt Fiebiger, and Dawn Denis-Stoughton, we formed the first dental team organized by fellow Canadian, Anne Fowler, to begin a *Healthy Living Program* in Honduras.

Anne initiated her *Healthy Living Programs* for Hondurans in 2000. These programs include *Visiting the Doctor Program*, *Women at the Well*, *Moms and Tots*, and *Adult HIV Education*. In 2006 she built the Hamilton Benest House where she lives and houses the volunteers from various medical fields who are participating in her programs. Anne's programs are not for profit; her volunteers are responsible for the cost of their own airfare, daily expenses, and accommodation. In our case, we also had to bring our own instruments, generously provided by Melanie of Hu-Friedy. George Brown College equipped us with toothbrushes, toothpaste, floss, and sterilization equipment.

The dental clinic staffed by Dr. Kerr and Bernt was up in the mountain, a 20-minute drive away from El Porvenir. The rest of us walked a few blocks to the town's municipal building, where the mayor had loaned us his large meeting room as our improvised clinic. We put together three wooden lounge chairs and a table for our supplies, and then we were ready to see the first group of children.

Initially, we believed that everyone needed emergency treatment because we were seeing at least one decayed permanent tooth in every child, root tips everywhere, poly pulps and abscesses. After an eye opening afternoon, consulting with Lisa if each child should be considered an emergency, we realized we had to triage. Later that night at dinner, we discussed with Dr. Kerr those cases that had priority over others.

A meeting with Jessica, a Peace Corps worker from Ohio who had been in El Porvenir for almost a year, partly answered our query why the children's teeth were in such poor shape. She told us that she had stayed with a Honduran family for three months before she was allowed her own accommodation, and during this time she became addicted to Coca-Cola. The sad truth is that Coca-Cola, being cheaper than water and more readily available, is a staple drink in every family.

We also began to notice all the candy. It was sold on



▲ Oral Self Care instruction to interested schoolgirls



▲ Team Dental: Nicole, Marie, Dr. Kerr, Dawn, Lisa and Bernt

every street corner, and vendors peddled around on bikes selling it. There was even a candy store in the school yard. Many children, even after getting nutritional counselling the day before from us, would be buying their day's supply of candy at 7:30 in the morning.

Each day it became more and more evident that there was not going to be enough time for Dr. Kerr to see all of the children who needed treatment. In four and a half days we were able to debride the teeth of 251 children, provide dental hygiene instructions and nutritional counselling with the help of our translators, and give each child a fluoride rinse treatment. However, at the end of the week there was still a stack of charts remaining for those children who still needed to be seen. Fortunately, the regular dentist in the town watched and learned from Dr. Kerr, and was willing to take on those children who Dr. Kerr would not have enough time to see.

At the end of a very long, tiring, and hot week, the discomfort of our swollen ankles and aching backs was overshadowed by the appreciation shown by the children as they handed us handmade thank-you cards and gave us numerous hugs. Nothing could have prepared us for the overwhelming feeling of satisfaction we all had at that moment.

As students, we could not have asked for a more rewarding learning experience to start our careers. It was a privilege to work with Anne, Dr. Kerr, Lisa, Bernt, and Dawn, who showed us that you can get more out of life if you step out of your comfort zone. The most important lesson we learned from this experience is that if you have a skill that can improve someone's quality of life, you need to use that skill to make a difference. You never know where it might take you. Our skills are taking us back to Honduras next year.

Sincerely,

Nicole Munoz and Marie Fuenzalida,

2nd year, George Brown College, dental hygiene program, Toronto, Ontario. E-mail: nikmunoz@gmail.com ©CDHA

Societal conditions driving the need for advocacy education in dental hygiene

Eunice M Edgington, RDH, BScD, MEd; Janice FL Pimlott, RDH, BScD, MSc; Sandra J Cobban, RDH, MDE

ABSTRACT

In recent decades interest in advocating for change in health policy has been growing among health professionals. National and international agencies and researchers identify health professionals as advocates for influencing those in power to increase accessibility and reduce health disparities. Health care reform movements and health care restructuring have stimulated a renewed interest in the need for policy advocacy by professions. Disparities in health and in oral health together with growing inequities in access to health care and to oral health care for many populations demonstrate the need for political action and social change. Advocacy education in nursing has been shown to be effective in creating nursing graduates who are interested and willing to participate in political action initiatives for social change. Dental researchers acknowledge that involvement in advocating for change in oral health policy and service accessibility is a profession's moral responsibility. Dental hygiene educators are beginning to explore and develop curriculum to prepare dental hygienists with the skills and knowledge required for political action and social advocacy. Dental hygienists who are well educated and who contribute to advocating for greater accessibility to oral health care services will in turn contribute to reducing oral health disparities for the population.

RÉSUMÉ

Au cours des dernières décennies, les professionnels de la santé se sont montrés de plus en plus intéressés à préconiser des changements en politique sanitaire et sociale. Les agences nationales et internationales ainsi que les chercheurs les considèrent comme des intervenants auprès des autorités pour accroître l'accès aux soins et réduire les disparités. Les mouvements de réforme et de restructuration des soins ont ranimé l'attention sur le besoin d'intervention politique de la part des professions. Les disparités en matière de santé en général et de santé buccale ainsi que les iniquités croissantes d'accès de plusieurs populations aux soins pertinents démontrent le besoin d'interventions politiques et de changements sociaux. L'éducation en matière de promotion dans le secteur infirmier s'est avérée efficace en formant de nouvelles diplômées intéressées et prêtes à participer aux initiatives de promotion de changements sociaux. Le personnel de la recherche en dentisterie reconnaît que l'implication dans un tel mouvement de promotion politique et d'accessibilité des services est une responsabilité morale de la profession. Les professeures d'hygiène dentaire ont entrepris la mise au point un programme visant à développer chez les hygiénistes dentaires les connaissances et les compétences requises pour intervenir en matière de politique et de promotion sociale. Avec une formation adéquate, les hygiénistes dentaires pourront apporter leur participation et contribuer à leur tour à réduire les disparités en matière de santé buccale dans la population.

Key words: dental hygienists, dental hygiene education, professional education, public policy, consumer advocacy

INTRODUCTION

Social advocacy is recognized as a legitimate political action process that incorporates a set of deliberate strategies to influence policy makers when they make laws, set regulations, distribute resources, and make other decisions that affect people's lives.¹ The last two decades have witnessed a growing interest in the involvement of professions in advocacy for change in health policy;²⁻⁷ this has been driven primarily by widespread health and oral health disparities in vulnerable populations, together with increasing inequity of access to health and oral health care services.^{8,9} Health policy advocacy is defined by Spenceley, Reutter and Allen¹⁰ as "knowledge-based action intended to influence system-level decisions for the purpose of improving health".^{p184}

Health care reform movements and restructuring have stimulated a growing interest in the impact of social, economic, and other public policy on health.^{11,12} This has led to a renewed drive among nursing researchers to examine the effects of health reform and human resource policies on health outcomes in health care institutions.^{10,13} As an example, increased awareness of the broader economic and social determinants of health has shifted the focus of the nursing profession's involvement in policy advocacy to include advocacy for healthy public policy.¹⁴⁻¹⁶ Healthy public policy is different from health care policy in that it includes broader determinants of health outside the health

care system such as poverty, education, and working conditions.^{10,13} Regardless of whether professions are focused on advocacy for health care policy or advocacy for healthy public policy, there are a set of essential skills and knowledge, identified by policy scholars, required for policy work.^{10,13}

Other intersecting movements have taken place within such national organizations as the Canadian Public Health Association (CPHA),¹⁷ the Canadian Association of Public Health Dentistry (CAPHD),¹⁸ the International Council of Nursing (ICN),¹⁹ and the Pew Commission,^{20,21} as they write new policies identifying the role of advocacy as integral roles of nursing and other health professions. The primary process for socializing health professionals into their future professional roles is through their formal education.^{22,23} Academic preparedness for policy advocacy roles has been strongly promoted in the nursing literature and many nursing programs have incorporated health policy education and political advocacy into their curricula with positive results.²⁴⁻³⁶

University of Alberta

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Correspondence to: Eunice M Edgington; ee2@ualberta.ca

Associate Professor, Dental Hygiene Program, Department of Dentistry,
Faculty of Medicine & Dentistry, 2032D Dentistry-Pharmacy Centre,
University of Alberta, Edmonton

Until very recently, the role of advocate for change in oral health care policy has not been recognized as a role for dental hygienists, either by the profession or the public. The central focus of dental hygiene advocacy education has been primarily to prepare dental hygienists for the role of patient/client advocate, and little attention has been given to the potential for broader advocacy roles.³⁷

In order for the role of policy advocate to be acknowledged broadly as an integral one for health professions, and prior to developing curriculum for the academic preparedness of professionals for this role, there has to be a perceived need in society and in the profession. This paper will identify some of the major antecedent conditions in society that are driving the need for the involvement of professions in policy advocacy for nursing and for dental hygiene. Nursing is presented first because the literature and research in political action and advocacy is well established. The information in this paper will serve to contribute to the discourse on critical issues and questions surrounding the meaning and direction of advocacy and advocacy education in dental hygiene.

Methods

A literature search was conducted from July 2008 to May 2009 using the Medline, CINAHL, and SAGE (CSA) databases. Several books by key authors of topics relevant to the paper were accessed. Of the articles generated by the research based on titles and abstracts, 110 were retrieved in full text. This search included peer reviewed literature reviews, empirical studies, theoretical papers, and position papers. The search terms used included dental hygiene advocacy, nursing advocacy, advocacy education, health professions, public policy, healthy public policy, health policy, political participation, social advocacy, patient advocacy, social justice, social responsibility and professionalization.

Health disparity and inequity

Rapid changes in society (political, economic, and technological) have made it difficult for health care systems to cope, and there is an increasing awareness of the many barriers to care that are inherent in the traditional framework of health care.^{11,14} Disparities of health and inequities in access are increasingly influenced by low incomes, poverty, and lack of power of vulnerable populations. Social exclusion of at-risk groups has a far reaching impact on individual, community, and population health.^{14,16}

Health Canada has identified marginal groups as including: Aboriginal Peoples, immigrants, refugees, racialized groups, people with disabilities, single parents, children and youth in disadvantaged circumstances, women, the elderly, unpaid caregivers, gays, lesbians, bisexuals and transgendered people.⁹ Socially marginalized groups are often silent in political action due to their fear of retribution and the lack of money to organize interest groups to work toward bringing their voices to policy makers in government. For these reasons many vulnerable people often go directly to nonprofit organizations for help, and do not interact with governments.

Governments are increasingly outsourcing and funding more and more social services to nonprofit organizations,

and they depend on these organizations to provide them with information on the needs of the people they serve. However, because of their relationship with government, there are questions about the ability of nonprofit organizations to be politically active and objective when representing the needs and concerns of the disadvantaged.³⁸ These factors, together with the widespread disparities and inequities of vulnerable populations and the reluctance of decision makers to develop health policy to address these issues, are the primary societal conditions that indicate a need for greater involvement of health professionals in advocating for change.^{2,10,15}

Oral health disparity and inequity

Despite the improved oral health status of Canadians in general due to advances in dental health technology and other factors, the literature is replete with information on the gross oral health disparities and inequities that are apparent among disadvantaged groups in Canada. These groups have been identified in the dental literature as the working poor, youth, elderly, physically or mentally compromised, First Nations, new Canadians, and institutionalized peoples.^{16,39} Debate in the literature about the causes of oral health disparity and inequity of access to care has given rise to a complex number of conditions that significantly influence the problem. These conditions include inadequate oral health education, unawareness of oral health needs, a lack of motivation to seek care, insufficient access in remote areas, a lack of social policy, poor life style choices, poverty, cultural issues, a shortage of dental providers, inadequate educational models in medical and dental schools, insufficient government funding resources, and an unawareness of social responsibility among health professionals in addressing the larger issues of access.^{4-6,39-45}

There is also much debate about what the solutions to oral health disparity and inequity should be, and for almost every causal factor identified there is a proposed course of action:

Some scholars see the problem as the responsibility of oral health professions, others see the issue as being largely the responsibility of the government and oral health policy.^{4-6,39-45}

Some see the problem as a shared issue. For example, Ozar⁴ examined disparities and inequities from a public policy perspective and suggested collective action is needed, involving all stakeholders to adequately address the complex issues from a systems perspective.

There is some debate in the literature on the fee for service model of oral health service delivery and the potential for this to contribute to the problem.^{4-6,39-45} For example, dentistry is a for-profit business, and many dentists are not eager to accept government reimbursed oral health services, and are not supportive of socialized oral health services.⁴

Further debate is also occurring concerning what range of oral health services (comprehensive or basic), and what populations (universal or at risk) to include in oral health policy.^{4,5,39,40}

In order to reach any kind of agreement on these issues a discourse among all stakeholders is recommended.⁴ It is clear from all this that whether oral health professionals

are advocating for change in oral health policy or for healthy public policy to address broader causes of the problem, they need to be educated on all issues and on the processes of policy work and political action. This is necessary particularly if they are going to be considered as serious participants in oral health or healthy public policy debate.

Health care reform movements

Three pivotal health promotion initiatives by the Canadian government were instrumental in creating new health care directions:

- A New Perspective on the Health of Canadians, often referred to as the Lalonde report (1974),⁴⁶
- Achieving Health For All: A Framework for Health Promotion (1986),⁴⁷ and
- The Ottawa Charter for Health Promotion (1986).⁴⁸

The Lalonde report concluded that health is interplay of environmental, biological, social, and health care factors, defined as the determinants of health and argued that the health care system is not the most significant factor in determining a person's health status.⁴⁶ This report set out "health promotion" strategies for improving health and reducing illness through changes in lifestyle, environmental and social factors. Mounting evidence on the social determinants of health continues to support the claims of the Lalonde report, and many countries worldwide have developed their own reports examining this interaction of factors.⁴⁸

This health promotion vision was further developed in 1986 when Canada hosted the First International conference on Health Promotion and from this conference the *Ottawa Charter for Health Promotion* was released.

Following this, Jake Epp, then the Canadian Minister of Health, presented the document, *Achieving Health for all: A framework for Health Promotion, the Ottawa Charter*. The Epp report both viewed health promotion as "a process of enabling people to increase control over their health" by making these conditions favourable through advocacy for health. These included building health public policy, creating supportive environments, strengthening community action, and developing personal skills.⁴⁷

The realization that health is significantly influenced by the determinants of social, economic, and political conditions including inequities of income distribution, housing and social support has broadened our view of health and has led to the recognition that one of the most effective ways for enhancing population health is to advocate for healthy public policy.^{11,13,14,49}

Health care restructuring directions

Globalization and international markets are influencing governments worldwide to form a consensus on an ideal model for health system reform. The ideals that form the basis of the model are decentralization, direction, and evaluation rather than program delivery, reliance on market systems for service distribution, for-profit health care, and responsiveness to increasing demands for quality improvement.^{11,50} Borthwick and Galbally¹¹ argue that "these ideals are compatible with a large number of

disparate health policy choices and conceal a large number of practice problems".^{p76}

Equity of access to health services for marginalized populations in this global model is not necessarily ensured.¹¹ The model has many implications for nursing, a few of which are: the increased need for economic analysis with an emphasis on evidence based evaluation of health care outcomes and the development of monitoring benchmarks; the need to build capacity in decentralized areas of the system and an emphasis on prevention and an increasing need for managed care systems.

Borthwick and Galbally predict that health care will be driven more by administrative and governmental ideals rather than by medical decisions. Governments will decide what services will be covered by health care. New health management systems will demand balancing national budgets between clinical expertise and other primary health care staffing. It will result in health providers taking on new roles and this might displace nurses as other groups with different training arise.¹¹ Health service restructuring objectives have provided a new impetus for nursing to become more engaged in policy development and policy processes.

For example, nurse researchers have been engaged in policy research to determine the effects of health service restructuring and human resource policy on patient outcomes in institutional settings, policy processes associated with evidence based practice and quality of practice environments.¹³ The need for nurses to learn the skills of advocacy and political action is deemed fundamental if they are to influence the direction the health system will take.^{11,13}

Nursing associations have created long term plans to strategically influence health policy in the direction of primary care principles and goals.¹³ The establishment of the Office of Nursing Policy in the federal government of Canada in 1999 created to advise Health Canada on nursing perspectives on federal policy issues and programs, is another notable initiative.⁵¹

In order to affect the direction of health care policy, nurses need to develop knowledge in all areas of health care reform, a vision for their future roles in health care, and a deep understanding of the political and policy processes.^{11,13} Dental hygiene would be wise to follow a similar course.

Association and organizational policies on advocacy

In the 1970s and 1980s a series of events occurred that provided an impetus for nursing scholars to encourage nursing to return to its legacy of social activism through the integration of political competency and policy studies into the nursing curricula.⁵² These events included:

- ICN's inclusion of advocacy into their professional codes in 1973,¹⁹
- World Health Organization's conceptualization of primary health care and health promotion and advocacy,⁵³
- The formation and work of the PEW Commission in the USA,²⁰
- And more recently from a Canadian perspective,

the work of the PHAC,¹⁷ and the CAPHD,¹⁸ which developed competencies for advocacy for public health professions and for oral health professionals respectively.

- In 1998, PEW Health Professions Commission published "Twenty-one Competencies for Health Professionals for the Twenty-First Century". These competencies included: "advocate for public policy that promotes and protects the health of the public".^{20,21,54} Many nursing programs in the United States have used this report to guide the development of baccalaureate and master's curricula that includes policy and political competency education.^{24,26,27,29-31,33-36,54}

The notion that oral health professionals can be significant interdisciplinary collaborators in the delivery of public health services was acknowledged in the 2005 Pan Canadian Framework for Public Health Human Resources Planning⁵⁵ when dental hygiene was listed as one of twelve regulated professions making up the public health workforce. The vision set out by the Pan Canadian framework emphasized that through collaborative planning, all jurisdictions in Canada will have access to a knowledgeable public health workforce to meet public health needs and to reduce health and social disparities. Dental hygiene was identified as one of the professions that can make a sizable contribution to achieving this vision.⁵⁵

The PHAC¹⁷ identified core competencies for the practice of public health under seven categories, with one category emphasizing partnerships, collaboration and advocacy. These core competencies reach beyond discipline boundaries and are applicable to all professions working in the public health sector. The benefits of the competencies are two-fold, first they provide guidelines for the basic skills required by public health practitioners, and second, they provide educators with the underlying rationale for developing educational curricula.¹⁷

In 2008, the CAPHD integrated the ideas and wordings of the PHAC's *Core Competencies* into discipline competencies specific to dental public health. Advocacy related competencies are designated primarily under the categories of advanced and expert competencies with only a few listed under foundational competencies. Foundational competencies are intended for oral health workers who have post secondary education in dental public health and independence with minimum supervision; interestingly only chair side assistants and dentists were listed as possibly meeting a subset of the foundational competencies, whereas dental hygienists are not mentioned. The competencies articulated in the advanced and expert category are deemed as unlikely to be possessed by any one individual, but would primarily be viewed as team abilities. It is evident that very few oral health professionals, including dental hygienists, currently possess the necessary skills and knowledge to demonstrate competency in advocacy as designated in the advanced or expert competency categories.¹⁸ The lack of advocacy skills and knowledge, together with the fact that there are fewer dental hygienists in public health to influence policy decision makers, demonstrates that there is a need to educate all dental hygienists to be advocates for change in oral health policy.^{56,57}

Traditions of social advocacy in nursing

A legacy of social activism has been passed down to nursing by such nursing pioneers as Nightingale, Wald, Sanger, Dock and others who were strong political activists and role models for the socialization of modern nursing to political action.^{13,25,52} Florence Nightingale understood the influence that social conditions had on health, and became politically active in changing the laws and social conditions that created these problems. Later, Lillian Wald lobbied for change to improve social conditions that impacted the health of poor immigrant families and other vulnerable populations. Political activism for change in social conditions and health formed the historical underpinnings of public health education, and advocacy has been considered essential to public health nursing.^{25,52,58}

In the early 1970s "advocacy" was formalized as an integral role of nurses when such terms as "loyal obedience" and "obeying physician's orders" were removed from the publications of the ICN in 1973, and the American Nurses Association (ANA) Code of Ethics in 1976.³² However in the past two decades there have been some concerns that nursing was abandoning its historical focus directed at changing social conditions. This was attributed in part to the administrative hierarchies in the organizations that employ nurses, and to the class structure within nursing that was created by the various levels of nursing qualifications. This class structure is seen as a contributing factor in silencing those with lower credentials, thus reducing the focus on advocacy and policy studies in nursing education.⁵² As mentioned earlier, recent health care restructuring has renewed nurses' interest in policy development together with a concomitant desire to include policy advocacy and healthy public policy advocacy in nursing curricula.^{10,13}

Traditions of social advocacy in dental hygiene

There is a dearth of literature in dental hygiene regarding roles played by dental hygienists as advocates in changing oral health policy. This is perhaps because dental hygienists have been socialized within the construct of a patriarchal power relationship, with the dentist acting as the gatekeeper and controller of dental knowledge. Dental hygiene was founded by a dentist who sought female subordinates to perform "oral housekeeping duties" on the premise that feminine attributes were best suited to that role.⁵⁹⁻⁶¹ Knowledge of the profession's historical origins is central to our understanding of the forces that have shaped dental hygiene.

As an emerging profession, the primary focus of dental hygiene has been on advocacy for gaining recognition and visibility as a profession, and for obtaining self regulation and independence. There has been a reluctance to participate in social policy activism for fear of losing ground in these areas.⁶² This type of professional advocacy is perceived by some as self serving or self preserving as it benefits only the profession. The phenomenon of risk aversion for self preservation is not new, as it has been observed in the nursing profession. Several studies found that nurses are reluctant to be involved in policy advocacy, due to such perceived barriers as feelings of lacking power, the resistance of powerful physicians, the lack of support from nurses themselves for change, and a lack of

free time.^{10,63} These perceived barriers lead to a more self-serving direction for policy advocacy in nursing as they view political activism as a threat to the status of their profession.¹⁰ As Spenceley et al.¹⁰ say, "Times of threat to the profession may have encouraged nurses to retrench into professional silos, fragmenting efforts to mobilize for positive change".^{p187}

The tendency for nursing to promote policy advocacy as a unique role of nursing may in fact undermine the key strategy of policy advocacy, which is to build coalitions with others to advocate for change. Spenceley et al. suggest that maintaining the notion that nurses are the "ideal" advocates for change in health policy may indeed perpetuate the perception that nurses are advocating for nursing rather than for the betterment of health.¹⁰ This approach may have the pejorative effect of distancing other professions, and discouraging them from participating in health policy advocacy. Policy makers may question nurses' motives as being self-serving particularly when health reform values interprofessional collaboration and interdisciplinary teamwork as fundamental attributes.¹⁰ Lessons learned from nursing advocacy approaches are important to consider in developing policy advocacy directions for dental hygiene.

Education developments in nursing

In 1978, Carper, a nurse theorist, developed a metatheory for examining nursing epistemology, in relation to four fundamental patterns of knowing in nursing: empirics, esthetics, ethical or moral knowledge, and personal knowledge.⁶⁴ Carper's patterns have been applied to dental hygiene and were found to be relevant to dental hygienists' ways of knowing.⁶⁵

In the mid 1990s, White examined Carper's typology of nursing knowledge and proposed "sociopolitical knowing" as a fifth pattern of knowing.⁶⁶ White also examined Jacobs-Kramer and Chinn's model,⁶⁷ that extended Carper's framework to facilitate the application of the patterns of knowing into clinical practice.⁶⁶ She found that although these two approaches were adequate in identifying knowing in terms of nurse-patient relationships, they missed the larger context, the sociopolitical environment.

Sociopolitical knowing, in White's opinion, is fundamental to the understanding of all others and it is imperative that nurses understand the social, political, economic, and cultural contexts that influence client states and nurses' roles. White argues that Carper's patterns of knowing, address the who, how, and what of nursing practice, while sociopolitical knowing addresses the "wherein", moving the focus from the nurse-patient perspective to the broader context where nursing and health care occurs. Nurses must understand the health related interests of the public and become involved and active in promoting these interests to the political gatekeepers.⁶⁶ White's fifth dimension of sociopolitical knowing has been used in nursing to promote education in political action and advocacy, and may be useful for examining and advancing sociopolitical knowing in dental hygiene and for promoting associated changes in the curriculum. Like nursing, dental hygienists must understand the health and oral health needs as well as the values of the public, and become involved and active in promoting these needs to the political gatekeepers for

change in oral health policy.

There is evidence in nursing education research to support the premise that academic preparation in health policy increases students' knowledge and understanding of the political process, increases their belief that advocacy is important and develops confidence in their ability to discuss and debate policy issues.^{13,68} In addition, students report a greater likelihood of future participation in advocacy initiatives for policy change.^{24,25,27,31,69,70} Although this research on the outcomes of advocacy education holds promise, there still is a scarcity of curricula in advocacy at the baccalaureate nursing level,¹⁰ and also a lack of understanding of how entry level nurses learn this role.³²

Education developments in dental hygiene

Despite expanding curricula, dental hygiene education remains primarily a clinical practice model, and in this model there is little opportunity to socialize dental hygienists beyond the role of patient advocate. While there have been isolated cases of student involvement in political action these have been volunteer roles, and not part of a formal dental hygiene curriculum. Kubsch, et al.⁷¹ suggest that while patient advocacy is critical for vulnerable groups, defining one's role solely as patient advocate reduces the importance of the profession's role and limits the advocate's actions. Dental hygiene baccalaureate education is moving towards a more professional model with some emphasis on preparing graduates for expanded roles; however there is limited theory incorporated in preparing dental hygienists academically for the role of advocate for initiating change in oral health policy. If dental hygienists are going to achieve their true potential as political advocates, they need to demonstrate they have the knowledge of policy and political processes in order to influence those who have the power to affect change. The future of dental hygiene may very well depend on the profession's ability and willingness to assume greater responsibility as social policy advocates, to engage in discussions with policy makers about oral health disparities and inequitable access, to create change that goes beyond lip service.

Social justice and professions' responsibility

There is a supportive body of literature being developed on social justice, ethics, access, and care that points to the obligations of health professionals to work together to advocate for full access to basic oral health care.⁴ It is an ethical and moral responsibility for oral health professionals to acquire awareness, knowledge, and understanding of the complex societal factors affecting oral health, and show a willingness to be involved in advocating for change.⁴¹⁻⁴³ In order to assume roles of political advocacy, it is critical for oral health professionals to demonstrate political competence and knowledge of how policies are formed and implemented. According to Ozar⁴ the real issue is with the broader determinants of health, not with the insular pockets of oral health disparity, and broader system change will only occur through networks of health professionals working together to advocate for change in healthy public policy. Further to this, Ozar posits that oral health professionals should be working to educate and motivate society and its political leaders in order to change the system. Ozar

views this as the only way that oral health care needs will be met; this is in keeping with the broader public health vision, creating coalitions on a broader scale.⁴ If Ozar's expectations are to be realized, then dental hygienists must be prepared academically with the skills and knowledge needed to assume these roles.

Discussion

The process of critical debate about advocacy roles is fundamental in order to determine how dental hygienists can be engaged in grassroots, organizational and political advocacy for policy change. It may involve such questions as:

- Why should dental hygienists advocate?
- What will advocacy involve?
- When should dental hygiene be involved in advocacy?
- How will they be involved?
- What are the parameters of advocacy?
- What are the risks and repercussions of advocacy on the profession and the professional?
- How can dental hygiene be empowered to carry out the role of social advocacy?

Despite nurses' historical legacy of advocacy, Hewitt⁷² has argued that in the current political environment, nurses continue to lack the power to openly effect change through advocacy, and most of their involvement in advocacy continues to be covert. An interdisciplinary team approach to advocacy may be a more effective approach as it may avoid the perceived risk repercussions for individual professions. This view is reflected in Ozar's perspectives on oral health advocacy, in which he emphasizes the need for oral health professionals to be involved in coalitions that address broader system change in order to achieve meaningful and long lasting outcomes.⁴ Individual efforts of charity, although commendable, will not solve the gross inequities that are apparent in oral health care access. If dental hygienists are to become effective advocates for system change they will more than likely need to consider a collaborative approach that involves dentistry, and other professions and stakeholders, and this is very complex.⁴ Although standards of practice guidelines and theorists have described advocacy as a role for health professionals and have delineated associated actions, these are not enough to guide health professions on decisions of what to do, particularly in regard to system advocacy which is also very complex.^{10,15,52} If system change is the goal, an interdisciplinary debate on the roles and meaning of advocacy for health professions and for stakeholders will need to take place. This process would be a rational and fundamental step in defining the parameters of advocacy action and the skills and knowledge needed for each, and for providing a framework for developing the theoretical underpinnings of the concept of advocacy as a role for health professions, including dental hygiene.

It is clear from the literature that many health professionals are encouraging critical debate on the theoretical basis for advocacy within their disciplines, and on the appropriate skills and knowledge necessary for their professions to conduct advocacy for policy change. It is timely for dental hygiene to embark on a similar critical discourse, at least within the profession. The dental hygiene degree program at the University of Alberta has taken a leadership role in

preparing dental hygiene undergraduates for future advocacy roles, by providing a dedicated course on advocacy planning and policy change since 2000.

CONCLUSION

Advocacy for change in health and in oral health policy is a concept that is receiving growing interest both in nursing and more recently in dental hygiene. The drive to include advocacy in nursing education curricula has been the centre of an ongoing discourse in nursing research and education for the past two decades. Advocacy education in nursing has been shown to be effective in creating nursing graduates who are interested and willing to participate in political action initiatives for social change. Dental hygiene, on the other hand, has been slower to incorporate advocacy into the curriculum, and is just beginning to explore and develop curriculum for this purpose. Further study will need to be done to examine the effectiveness of advocacy education for dental hygiene.

This paper has suggested there is a role for dental hygiene in advocating for oral policy change for the good of society, and that advocacy education is fundamental for developing the prerequisite skills and knowledge for this role. Disparities in oral health together with growing inequities in access to oral health care for many populations points to the need for political action and social change. National and international agencies and researchers identify health professionals as advocates for influencing those in power to increase accessibility and reduce health disparities. Dental researchers recognize that it is an oral health profession's moral responsibility to advocate for change in oral health policy and service accessibility. Policy documents such as professional competencies include advocacy as a core responsibility both in nursing and in dental hygiene.³⁷

The antecedent conditions identified and discussed in this paper are driving the need for advocacy education in the curricula of health professions including dental hygiene. Given that current health reform values collective and interdisciplinary action, it is not recommended that any one profession identify itself as being the 'ideal' advocate as this may be interpreted as self serving and may distance other professions.

This paper is intended to advance the discussion of dental hygiene roles in advocating for change in oral health policy and articulating the need for inclusion of dental hygiene advocacy education in the curricula.

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North American Dental Hygiene Research Conference proceedings: poster presentations

1. Comparing consumer acceptance and perceived benefits of two floss technologies 275
2. The epidemic of dental disease in poor children of Northeast Philadelphia 276
3. Strengthening the quality of oral cancer screening 276
4. Biofilm removal with a dental water jet 277
5. Effect of low-temperature atmospheric pressure plasma pencil on *Streptococcus mutans* 277
6. Comparative plaque removal evaluation of two floss technologies 278
7. Understanding dental hygienists as adult learners in social action 278
8. Expanding the role of dental hygienists providing access to care using a school based model and teledentistry 279
9. Beneficial outcomes from a service-learning community program 279
10. A team approach for community outreach 280
11. Application of evidence in health care practice: a cross-discipline comparison ... 280
12. Identification of pathogen and host-response markers correlated with periodontal disease 281
13. Increasing utilization of preventive dental care services through affiliated practice dental hygiene 281
14. Knowledge translation along the continuum from research question to policy 282
15. Dental hygienists' perceptions of the bachelor's degree in dental hygiene and the advanced-degree oral health care practitioner 282
16. Tobacco cessation training for the oral health care team 283
17. Comparison of 1-year and 2-year degree completion students 283
18. Assessing where and how dental hygiene students apply women's health knowledge 284
19. Implementation of a tobacco use intervention (tui) program into clinical dental hygiene education 284
20. An experiential learning model for teaching social advocacy education 306
21. How impactful are your recommendations? 306
22. Oral malodor—comparison of subjective and objective measurements 307
23. Enamel fluoride uptake and antimicrobial effectiveness of an herbal fluoride mouth-rinse 307
24. Dental hygienists' social sensitivity regarding access to dental care issues for the underserved population 308
25. Bisphenol a blood and saliva levels prior to and after dental sealant placement in adults 308
26. Comparison of a novel interdental brush to dental floss for reduction of plaque and bleeding in sites of intact interdental papillae: a randomized controlled clinical trial 309
27. Perceptions of individuals who frequently vs. occasionally whiten their teeth 309
28. Role of oral/dental procedures in causing infections associated with vascular access devices in hemodialysis patients 310
29. A simplified table to identify pediatric dental clients needing further evaluation of blood pressure 310
30. Course management systems: implications for hybrid course development 311
31. Clinical assessment of remineralization from fluoride varnish treatments 311
32. An analysis of student performance benchmarks in dental hygiene via distance education 312
33. Gingivitis – objective measurement utilizing digital imaging 312
34. Objective grading of tooth color change 313
35. Objective grading of plaque - digital image analysis 313
36. Preclinical evaluation of genistein and biochanin A inhibition of fak in oral squamous cell carcinoma cell lines 314
37. Participation in clinical research: understanding motivation and attitudes 314

HEALTH PROMOTION/DISEASE PREVENTION (ORIGINAL RESEARCH)

1. Comparing consumer acceptance and perceived benefits of two floss technologies

*Christine A Charles, RDH, BS; Lai Hing Vair, BS; Daniel Queiroz, BS; JA McGuire, MS; Carol Gell, PhD; Elizabeth Channell, MS; Angela D Morris, RDH, MS
Johnson & Johnson Consumer & Personal Products Worldwide, Division of Johnson & Johnson Consumer Companies, Inc., Skillman and Morris Plains, NJ, USA

Purpose: The purpose of this quantitative, in-home use study was to evaluate consumer acceptance and benefits of a new floss technology regarding parameters of perceived cleaning efficacy, comfort and overall liking.

Problem statement: Can a consumer perceive differences between 2 floss technologies in factors that might affect patient compliance, such as perceived cleaning efficacy, comfort and overall liking?

Methods: Two hundred and sixteen respondents, across 6 different geographic locations in the U.S., completed a questionnaire in this blinded, paired-comparison, 2-way crossover home use study evaluating 2 dental floss products. Respondents were instructed to use each product at least 3 times over a 3-day period with 1 day of rest between test periods. Responses were scored on a 9-point hedonic/intensity, or a 5-point agree/disagree scale. Data were analyzed using a 2-way ANOVA with respondent and floss product as factors.

Results: Results demonstrated that the Micro-Grooves™ technology monofilament floss (Reach® Ultraclean™ floss) was superior to a standard monofilament floss (Crest® Glide® Original Mint floss) for:

- overall liking (7.05 vs. 5.99, $p < 0.05$, 1=dislike extremely, 9=like extremely),
- perceived cleaning (7.55 vs. 6.99, $p < 0.05$, 1=extremely ineffective, 9=extremely effective)
- comfort “comfortable to hold” (7.29 vs. 6.14, $p < 0.05$, 1=extremely uncomfortable, 9=extremely comfortable), “comfortable to grip” (4.10 vs. 3.25, $p < 0.05$)
- having better control while flossing (3.97 vs. 3.28, $p < 0.05$, 1=completely disagree, 5=completely agree).

Additionally, both flosses were similar for:

- resistance to shredding or fraying and
- easy sliding (“easy to insert,” “easy to remove” and “easy to slide between teeth”), with one exception. Among Crest® Glide® floss users, the new technology was perceived as significantly easier to insert.

Conclusion: This home use test demonstrated consumer perceivable differences between 2 floss technologies and the superior performance on overall liking, perceived cleaning efficacy and comfort of a new monofilament floss with Micro-Grooves™ technology compared to a standard monofilament floss.

2. The epidemic of dental disease in poor children of Northeast Philadelphia

*Judy E Gelinas, RDH, BS; Iain FS Black, MD;
Wilma B Yu, RN, MS
St Christopher's Foundation for Children

Purpose: To determine the extent and severity of dental disease in 2 to 9 year olds in a targeted low socioeconomic Northeast Philadelphia population.

Problem statement: Data compiled by St Christopher's Foundation for Children found in children, 2 to 3 year olds, 28.4% had dental decay. Incidence rose to 72.4% by 8 to 9 years old. These rates are double those of the state and Philadelphia, and triple the *Healthy People 2010* target.

Methods: The study was a quantitative retrospective study of 2,527 children, ages 2 to 9 years old, treated through the St Christopher's Foundation for Children's Mobile Dental Program (Ronald McDonald Care Mobile) during a 2-year period from January 1, 2007 to December 31, 2009. Data are compiled by age, and look at the children seen with

dental decay expressed as number of children and percentage by grouping. The study compiled the severity of dental decay by recording the number of teeth with decay per child.

Results: Data showed a significant incidence of disease starting in toddlers, with over 28% of children in this group suffering from decayed teeth. By kindergarten, the incidence doubled to 56.7% and the trend continued to reach 72.4% by age 9, when the incidence began to level off. Looking at severity, 30% of the 2 to 3 year olds had decay in 5 or more teeth—this increased to 43% by age 8.

Conclusion: Dental disease is a major concern for Northeast Philadelphia. The earlier a child accesses dental care, the more likely the child will have fewer decayed teeth. Early intervention reduces the number of decayed teeth, reduces the need for restoration, reduces the cost of dental treatment, reduces the chance of recurrent decay and increases the chance a child will maintain healthy dentition.

3. Strengthening the quality of oral cancer screening

*DM Laronde, RDH, MSc;^{1,2} PM Williams, BSN, DMD, FRCD(C);^{2,3} TG Hislop, MDCM;² JL Bottorff, PhD, RN, FCAHS;^{2,3} CF Poh, DDS, PhD, FRCD(C);^{2,3} S Ng, DMD, FRCD(C);² MP Rosin, PhD;^{1,2}

¹Simon Fraser University, Burnaby; ²BC Cancer Agency, Vancouver; ³University of British Columbia, Vancouver, BC, Canada

Purpose: To study current oral cancer screening practices, identify factors that influence this behavior and study the effects of using a novel adjunctive screening device, fluorescence visualization (FV), within community dental offices.

Problem statement: Oral cancer screening is a non invasive, quick and painless skill that oral health professionals are taught, yet less than 30% of people surveyed have ever been screened. More than 40% of oral cancers are diagnosed at a late stage where 5-year survival is poor. There is a need for continuing education to maintain and promote this skill, and to incorporate this behavior into consistent daily routine.

Methods: Fifteen dental offices from the Vancouver area

took part in a 1-day oral cancer screening workshop, offering both didactic and clinical components. Offices screened patients 21 years of age and older for 11 months, collecting demographic, clinical and FV information by questionnaire. Two focus groups were used to identify factors influencing screening behavior and the value of FV. Suspicious lesions were referred to a specialty clinic or reviewed by a community facilitator.

Results: Of the 2,599 patients screened, 438 lesions were recorded. Ninety-four of 133 patients asked to return in 3 weeks were reassessed. Twenty-six patients were referred directly to a specialty clinic while a further 34 were reviewed by a study facilitator who referred an additional 7. Seven patients were biopsied resulting in 3 dysplasia cases.

Conclusions: Future workshops should focus on clinical presentation of benign and variations of normal mucosa. Reviewing a lesion 3 weeks after the initial visit greatly reduced the number of confounders and unnecessary referrals.

Acknowledgement: Supported by NIDCR grant R01DE13124, and a scholarship from the Michael Smith Foundation for Health Research to DML.

4. Biofilm removal with a dental water jet

Deborah M. Lyle, RDH, MS
Water Pik, Inc.

Purpose: To evaluate the effect of a dental water jet on biofilm using scanning electron microscopy (SEM).

Problem statement: Traditional measures of detecting biofilm by staining and viewing with the naked eye (Plaque Index) provide limited information on the impact to the biofilm by a device. This study was designed to provide information on biofilm removal at the microscopic level.

Methods: Eight teeth with advanced aggressive periodontal disease were extracted. Ten thin slices were cut from 4 teeth. Two slices were used as the control, 8 were inoculated with saliva and incubated for 4 days. Four slices were treated using a standard jet tip and 4 slices were treated using an orthodontic jet tip. The remaining 4 teeth were treated with the orthodontic jet tip but were not inoculated with saliva to grow new biofilm. Experimental teeth were treated using a dental water jet for 3 seconds on medium pressure. Images of the control and samples were taken with the SEM from representative areas of treated

and untreated regions of the tooth slices, and total bacteria numbers were counted on standard areas of 10 µm x 10 µm. The mean was determined and the results were extrapolated on a standard area of 1 cm². The extrapolated area was then multiplied with the number of bacterial layers of the biofilm. The total bacterial load was calculated.

Results: The standard jet tip removed 99.99% of the salivary (ex vivo) biofilm, and the orthodontic jet tip removed 99.84% of the salivary biofilm. Observation of the remaining 4 teeth by the naked eye indicated that the orthodontic jet tip removed significant amounts of calcified (in vivo) plaque biofilm. This was confirmed by SEM evaluations.

Conclusion: The dental water jet (Water Pik, Inc, Fort Collins, Colo.) can remove both ex vivo and in vivo biofilm. Water Pik, Inc. donated the dental water jets used in this study. Water Pik, Inc. has provided unrestricted research grants to the Center for Biofilm, USC School of Dentistry.

References: Gorur A, Lyle DM, Schaudinn C, Costerton JW. Biofilm removal with a dental water jet. *Compend Contin Educ Dent*. 2009;30(Spec 1):1–6.

5. Effect of low-temperature atmospheric pressure plasma pencil on *Streptococcus mutans*

Margaret Lemaster, BSDH, RDH, MSc; *Gayle McCombs, RDH, MS; Michele Darby, BSDH, MS; Wayne Hynes, PhD; Mounir Laroussi, PhD
Old Dominion University, Virginia

Purpose: This study was conducted to determine if low-temperature atmospheric pressure plasma (LTAPP) has the ability to inactivate dental caries causing bacteria, specifically *Streptococcus mutans*.

Problem statement: Given the limited knowledge available on the bactericidal effects of LTAPP, this investigation set out to determine if LTAPP was effective at inactivating the caries causing bacteria *S. mutans*.

Methods: *S. mutans* were inoculated at a 1:100 dilution in brain heart infusion broth and exposed to LTAPP at various time intervals (60, 120, 180 and 300 seconds). Seventy-two

samples of *S. mutans* were exposed and 18 samples served as controls. Samples were plated on *Mitis salivarius* agar and incubated 48 hours at 37° C. The number of colony forming units (CFU) and inactivation factor were determined. Data were analyzed using repeated measures ANOVA at 0.05α significance.

Results: Analysis revealed a statistically significant bactericidal effect of *S. mutans* when exposed to LTAPP at each time exposure of 60, 120, 180 and 300 seconds. There was an average 95% inactivation factor for the 300 second exposure.

Conclusion: LTAPP has a statistically significant bactericidal effect at 60, 120, 180 and 300 second exposures, as measured by CFU. Inactivation effect on *S. mutans* at 300 second exposure were 95%, 92% at 180 second exposure, 76% at 120 second exposure and 53% at 60 second exposure.

6. Comparative plaque removal evaluation of two floss technologies

*Angela D Morris, RDH, MS; Sylvia L Santos, RDH, MS
Johnson & Johnson Consumer & Personal Products
Worldwide, Division of Johnson & Johnson Consumer
Companies, Inc., Morris Plains, NJ, USA
Matthew J Cronin, DMD
New Institutional Service Co., Inc., Northfield, NJ, USA
Chhaju R Goyal, BDS; Naresh C Sharma, DDS
BioSci Research Canada, Ltd., Mississauga, Ontario,
Canada
JA McGuire, MS
Johnson & Johnson Consumer & Personal Products
Worldwide, Division of Johnson & Johnson Consumer
Companies, Inc., Morris Plains, NJ, USA

Purpose: The objective of these 4 independent clinical studies was to compare the interproximal plaque removal efficacy of Reach® Ultraclean™ floss versus various marketed flosses (Crest® Glide® Original Mint, Oral-B® SATInfloss®, Crest® Glide® Deep Clean, Crest® Glide® Whitening Plus Scope®, Crest® Glide® Comfort Plus and Crest® Glide® Shred Guard).

Problem statement: Can a new monofilament dental floss with Micro-Grooves™ technology provide greater interproximal plaque removal than various marketed floss products?

Methods: Each Internal Review Board approved clinical study followed the same design: observer blind, randomized, 3-way crossover, controlled design. A trained dental examiner performed pre-flossing plaque evaluations on

subjects according to the Proximal/Marginal Index (PMI), and qualified subjects were randomly assigned to their sequence of treatments. A registered dental hygienist performed surrogate flossing on the 8 incisors followed by post-flossing PMI assessments. Subjects visited the clinical site 3 times with at least a 24 hour rest period between each visit. Data were analyzed based on an ANCOVA model with sequence, period and treatment as fixed effects, subject within sequence as random effect and the corresponding pre flossing score as a covariate.

Results: In these 4 studies, Reach® Ultraclean™ floss removed statistically significantly more interproximal plaque than the comparator dental flosses ($p < 0.001$) with percent reductions from pre-flossing plaque means as follows:

- Reach® Ultraclean™ (41.7%, 43.4%, 52.7% and 67.27%),
- Crest® Glide® Original Mint (19.3% and 28.8%),
- Oral-B® SATInfloss® (21.6% and 29.9%),
- Crest® Glide® Deep Clean (19.0%),
- Crest® Glide® Whitening Plus Scope® (17.2%),
- Crest® Glide® Comfort Plus (31.34%) and
- Crest® Glide® Shred Guard (32.15%).

Conclusion: Reach® Ultraclean™ floss with new Micro-Grooves™ technology removed significantly more interproximal plaque than the comparators tested.

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7. Understanding dental hygienists as adult learners in social action

Ellen J Rogo, RDH, MEd
Idaho State University, Department of Dental Hygiene

Purpose: The underserved population is more vulnerable to oral diseases from the lack of access to care, preventive services and comprehensive care. Dental hygienists are engaged in social action to improve access to care by providing direct care to the underserved population and working on legislative initiatives to expand the scope of practice. The purpose of the study was to understand dental hygienists as adult learners in social action.

Problem statement: The problem addressed by the study was the evolving role of practitioners as they challenged and changed the systems and policies to improve population health, which has not been addressed from the dental hygiene perspective. The significance of the inquiry was to understand *what* and *how* dental hygienists learned in their struggle to improve access of care.

Methods: A qualitative approach to data collection included personal interviews with 8 participants from California, Oregon and Washington who met the inclusion criteria. Data were analyzed using constructivist grounded theory methods and situational analysis.

Results: The grounded theory analysis revealed 3 categories of participant experiences: awareness, adaptation and relationships.

- Awareness was supported by the subcategories self awareness, status quo, recognition of power and injustice of systems.
- Adaptation was supported by the 2 subcategories specialization and creativity, while
- Relationships were supported by the connectedness and collaboration subcategories.

The situational analysis illuminated learning in formal settings, non formal settings and the informal settings of nursing home practices, public health practices, community health centers and the professional association. Three significant issues emerged from the analysis: dental insurance reimbursement, dental hygiene education and improving the oral health delivery system.

Conclusion: Dental hygiene practitioners as adult learners used a variety of strategies in their work place and as members of the professional association to learn in social action.

8. Expanding the role of dental hygienists providing access to care using a school based model and teledentistry

*Melanie L Simmer-Beck RDH, MS; Cynthia C Gadbury-Amyot, BSDH, EdD; Hayley Barker Ferris, RDH, BSDH, ECP; Bill Marse BS, Harvey Eplee, DDS
University of Missouri-Kansas City

Purpose: To provide preventive oral health services in a school based setting.

Problem statement: Can a school based preventive oral health program improve access to care? How will this affect the rate of decay and number of sealants in children?

Methods: This model replicates the "Community Collaborative Practice" model developed by Apple Tree Dental. It allows universal access by providing care "directly in the child's school". It expands the role of dental hygienists in the delivery of preventive care services by establishing telehealth links with dentists. The infrastructure promotes holistic care by integrating all health care related services. Services are provided by dental hygiene students supervised by faculty holding a Kansas dental hygiene extended care permit. This project was approved by the University of Missouri-Kansas City Internal Review Board.

Results: Approximately 916 children were eligible to participate in this program during the 2008–2009 school year, with 450 children enrolling. Baseline data from the first

target school were collected on 189 children with 119 (63%) exhibiting active decay. Sealants, restorative dentistry and dental hygiene care were rare. Children in our target population had a much higher rate of decay and significantly fewer sealants than children documented in a recent statewide survey, *Smiles Across Kansas 2007 Update*. Additionally, they did not meet the goals of *Healthy People 2010*

- to reduce the proportion of children, adolescents and adults that have untreated dental decay to less than 21%, and
- to increase the proportion of children who receive sealants on their molar teeth to 50%.

As a result, all 189 children received preventive services including teeth cleanings, fluoride, x-rays, sealants and education. Children who had decay were referred to dentists in the community that were part of the program, *Dentists Community Care*.

Conclusion: This model significantly increased access to care in both unserved and underserved populations. Future efforts will be directed toward obtaining funding to extend the program.

Acknowledgement: This project was funded by the REACH Health care Foundation.

NEW PROGRAMS

9. Beneficial outcomes from a service-learning community program

Carolyn H Ray, RDH, MEd
University of Oklahoma College of Dentistry, Department of Dental Hygiene

Purpose: The purpose of this program was to report the benefits of a school based sealant program that was a service learning opportunity for dental hygiene students.

Significance: Dental and dental hygiene schools have the opportunity to become involved in programs that benefit their communities and make a significant impact on the oral health of the children in those communities. More outcomes need to be reported on the retention rates of pit and fissure sealants (PFS) placed in school based sealant programs to provide evidence of the effectiveness of these programs.

Key features: Many service learning activities in dental hygiene curriculum are one time opportunities for students to experience community service. This program provided

feedback on the 1-year retention rates of sealants placed by dental hygiene students using only donated and volunteer resources.

Evaluation: During the spring of 2008, the dental hygiene faculty coordinator returned to 5 elementary schools to complete visual dental exams on third graders who received PFS the year before. Of the 205 students in the program:

- 174 (71.7%) were available to be re-examined.
- A total of 479 PFS were placed on the first molars of these students.
- This represented approximately 71% of the total sealants placed during the spring of 2007.
- Two hundred eighty-nine sealants were identified by visual oral exams.
- The retention rate was 60.3%.

The outcomes from this program suggest that a potential of 289 first molars were protected from dental caries.

10. A team approach for community outreach

*Maureen Tsokris, RDH, MPS; Laura Joseph, RDH, EdD
Farmingdale State College, NY

Purpose: The purpose of this program was to increase collaborative partnerships with the School of Dental Medicine at Stony Brook University, and the Suffolk and Nassau County Dental Societies, in order to provide preventive oral health services to underserved children in the community. Program goals were

- to reach children in the community who do not have access to oral health care,
- to provide students the opportunity to participate in a large community outreach program and
- to increase student's competency in assessing, managing and treating children of all ages.

Approach: As a host site, the dental hygiene program utilized sophomore students as care providers, freshman students as assistants and dental residents to provide urgent care. Notification of the event was given to local elementary schools via the school health nurse. Appointments were

made in blocks of 25, and all children were accompanied by a legal guardian. Once arriving at the site, each child was paired with a dental hygiene student who reviewed the health history and consent form, completed an intra and extra oral exam, provided oral health education, performed an oral prophylaxis, placed dental sealants and fluoride varnish. Dental hygiene faculty reviewed student findings and the supervising dentist signed the screening forms.

Evaluation: Students performed 106 dental screenings and 98 oral prophylaxes. One hundred and one dental sealants were placed, 2 children received urgent care, and all children and parents participated in an oral health education program. Of the 106 children seen at Farmingdale, 58% presented with decay, indicating the need for such outreach programs.

This collaborative approach toward community outreach was an outstanding way to unite the dental community in reducing health disparities and improve oral health outcomes.

HEALTH SERVICES RESEARCH (ORIGINAL RESEARCH)

11. Application of evidence in health care practice: a cross-discipline comparison

*Joanna Asadoorian, AAS (DH), BScD (DH), MSc
School of Dental Hygiene, Faculty of Dentistry, University of Manitoba, Winnipeg, Manitoba, Canada
Brenda Hearson, RN, MN, CHPCN(C)
Winnipeg Regional Health Authority Palliative Care Program and Canadian Virtual Hospice, Winnipeg, Manitoba, Canada
Satyendra Satyanarayana, BSc, MSc, MD, FRCPC
Centre for Addiction and Mental Health, University of Toronto, Toronto, Ontario, Canada
Jane Ursel, PhD
Department of Sociology, Faculty of Arts, University of Manitoba, Winnipeg, Manitoba, Canada

Purpose: The purpose of this study was to explore the understanding and experiences of evidence based practice (EBP) in 3 different disciplines: dental hygiene, nursing and psychiatry.

Problem statement: Research has demonstrated that there is a delay between new research findings and their application to practice. These delays can have serious implications for patient/client outcomes and treatment costs.

Methods: This exploratory, qualitative study used a grounded theory approach. A purposeful, convenience sample of 10 health professionals (n=3 dental hygienists, n=4 nurses, n=3 psychiatrists) was selected based on the individual researchers respective backgrounds. Researchers conducted

individual interviews using a semi structured interview approach. Data were first organized into substantive codes based on predetermined sensitizing concepts (enhancers and barriers to implementing EBP). Next, researchers identified emergent themes. Finally, participant experiences were compared across professions.

Results: Over 100 pages of transcribed data were available for analyses. The majority of study participants demonstrated an understanding of EBP, but most described a somewhat limited interpretation, only recognizing the "research" component. All participants were able to identify enhancers and barriers to implementing EBP, and over 50 substantive codes were revealed, which all fit within the 2 sensitizing concepts. Seven major themes emerged from these codes that researchers categorized as either being individual knowledge and attitudes factors or structural characteristics of the workplace. Through cross discipline comparisons, both differences and similarities within and across the 3 professions emerged.

Conclusions: This study revealed that many individual characteristics and attitudes and the workplace culture act together on health practitioners' ability to implement EBP, which is consistent with the work of others. The investigators concluded that there is a complex interplay between individual factors and, critically, the unique cultural features of different health professions that affects one's implementation of evidence into practice.

12. Identification of pathogen and host-response markers correlated with periodontal disease

*Janet S Kinney, RDH, MS, MS; Christoph A Ramseier, DMD; Amy Herr, PhD; Thomas Braun, PhD; James V Sugai, BS; Charles A Shelburne, PhD; Lindsay A Rayburn, BS; Huu M Tran, BA; Anup K Singh, PhD; William V Giannobile, DDS, DMedSc

Michigan Center for Oral Health Research, University of Michigan School of Dentistry, and Sandia National Laboratories, USA

Purpose: This study sought to determine the ability of putative host and microbially-derived biomarkers to predict periodontal disease status from whole saliva and plaque biofilm.

Problem statement: Periodontal disease afflicts over 50% of the adult population in the USA, with approximately 10% displaying severe disease concomitant with early tooth loss. The development of rapid point-of-care (POC) diagnostics has the potential for early detection of periodontal infection and progression to identify incipient disease and reducing health care costs.

Methods: One hundred subjects were equally recruited into a low risk disease cohort and a periodontal disease population. Whole saliva was collected and analyzed using antibody arrays to measure the levels of multiple pro-inflammatory cytokines and bone resorptive/turnover

markers. Salivary biomarker data were correlated to comprehensive clinical, radiographic and microbial plaque biofilm level for the generation of models for periodontal disease identification.

Results: Significantly elevated levels of MMP-8 and MMP-9 were found in subjects with advanced periodontitis with Random Forest importance scores of 7.1 and 5.1, respectively. Receiver operating characteristic curves demonstrated that permutations of salivary biomarkers and pathogen biofilm values augmented the prediction of periodontal disease category. Multiple combinations of biomarkers (especially MMP-8, MMP-9 and osteoprotegerin) combined with “red complex” periodontal pathogens displayed highly accurate predictions of periodontal disease category. Elevated salivary MMP-8 and *T. denticola* biofilm levels displayed robust combinatorial characteristics in predicting periodontal disease severity (AUC=0.88; OR=24.6, 95% CI=5.2, 116.5).

Conclusions: We have identified host and bacterially-derived biomarkers correlated with progression of periodontal disease. This approach offers significant potential for discovery of biomarker signatures for the development of rapid POC diagnostics for oral and systemic diseases.

Acknowledgement: This work was supported by NIH/NID-CR U01-DE014961 and NCRR UL1RR024986.

13. Increasing utilization of preventive dental care services through affiliated practice dental hygiene

Michelle L Gross-Panico, RDH, MA
Arizona School of Dentistry & Oral Health

Problem statement: Minority children and children from lower income families more likely experience the burden of dental disease. Since oral disease reduces quality of life, it is a priority to increase utilization of preventive dental services.

Purpose: Through Arizona's Affiliated Practice Relationship, dental hygienists are permitted to provide preventive dental services to qualified underserved children in a variety of community based health and educational settings without a prior examination by a dentist. The research questions addressed in this study are:

- Does Affiliated Practice increase utilization of preventive dental services by underserved children of age birth to 18 years? and
- What are the barriers and the level of importance of these barriers that impede underserved populations from receiving preventive dental services?

Methods: The survey was constructed and administered to parents/guardians of patients from birth to 18 years old who received preventive dental services from Catholic Health care West (CHW) East Valley Children's Dental Clinic, the Affiliated Practice dental clinic at San Marcos Elementary in Chandler, Ariz. Internal Review Board approval from CHW and Northern Arizona University

Results: Thirty-four surveys were completed; 21 in English and 13 in Spanish. The data were analyzed for descriptive statistics and non parametrically analyzed using the Friedman's Test, Kendall's W Test and the Wilcoxon Signed Ranks Test.

Conclusion: The study concluded that Arizona Affiliated Practice dental clinics increase utilization of preventive dental services for underserved children from birth to 18 years old, primarily due to the reduced cost of receiving care from these clinics. Based on this outcome, future funding efforts and legislative policies should support this dental care delivery model of Affiliated Practice to include treatment for adults and seniors.

No funding required for this project.

14. Knowledge translation along the continuum from research question to policy

*Joanne B Clovis, RDH, PhD; Debora C Matthews, BSc, DDS, DipPerio, MSc; Mark J Filiaggi, PhD; Mary E McNally, MSc, DDS, MA
Dalhousie University
Sandra J Cobban, RDH, MDE
University of Alberta

Purpose: Traditional dissemination of research through peer reviewed presentations and publications leaves gaps in knowledge translation that are critical to moving research into policy. Funding agencies recognize these gaps in knowledge uptake and increasingly require detailed plans for knowledge translation along the continuum from research question, method and results, to practitioners and to decision makers. A recent call for SEED grants on oral health disparities in Canada required a separate module on the knowledge translation (KT) plan. This presentation describes that process and result.

Problem statement: The development of a KT plan requires prior identification of key points in the continuum along with knowledge translation strategies to inform policy development.

Methods: Expertise in KT required the addition of a new

type of investigator to the research team. Specific audiences, partners and stakeholders were identified with complementary KT strategies to address groups at each of the milestones during the research project. The research is informed by social networking theory using linkage mechanisms consistent with the interaction model of KT. These linkages provide greater likelihood that this research will be useful to both researchers and users, increasing the possibility that the findings will be applied and providing maximum benefits to all communities.

Results: Dissemination activities include stakeholder networks and key messaging, along with formal reports and professional presentations. Utilization of such communication technologies as video conferencing and Websites are integral to the KT plan. Five elements suggested by Lavis et al.—the message, audience, messenger, process and effect—provide the evaluation framework for the KT strategies for the project. The KT plan with the SEED grant application was funded as 1 of only 4 in Canada.

Conclusions: The ultimate success of the KT plan is dependent on successful execution of the research, the communication strategies and careful evaluation of the components.

PROFESSIONAL EDUCATION AND DEVELOPMENT (ORIGINAL RESEARCH)

15. Dental hygienists' perceptions of the bachelor's degree in dental hygiene and the advanced-degree oral health care practitioner

*Kelly L Anderson, RDH, MHS; Barbara S Smith, PhD, PT.
Wichita State University, Wichita, KS, USA

Purpose: Determine dental hygienists' perceptions about 2 dental hygiene educational issues: bachelor's entry level and the oral health practitioner (OHP).

Problem statement: Many dental hygiene educators/students feel that sufficient educational activities/courses are completed to meet requirements for a bachelor's degree in dental hygiene (BSDH). The OHP is one avenue to improving access to care that is not well received by all stakeholders. Information concerning these 2 initiatives would be useful to those trying to implement these proposals.

Methods: A survey, sent to 564 graduates of a Midwestern University's dental hygiene program, consisted of statements about the BSDH and the OHP. A 5-point Likert scale evaluated respondents' perceptions. Students also ranked perceived benefits/negative impacts. The useable return rate was 33.6%. Data were analyzed using descriptive statistics and Chi-square tests. This study was approved by the Institutional Review Board of Wichita State University.

Results: More than 70% agreed with the statement "An associate degree sufficiently prepared dental hygienists for

their positions". Over 20% would leave dental hygiene if practice required a BSDH. Number of years since graduation and age group were significantly associated with 3 statements about the BSDH. In ranking BSDH limitations, the most frequently checked response was "no personal benefit." More than 70% also agreed with the statement, "The OHP would have a positive impact on access to dental care". Age and professional association membership were most associated with positive OHP statements. Seventy-five percent felt the master's educated dental hygienist would be adequately prepared to perform the proposed OHP functions. Approximately 50% did not view the OHP as a direct threat to dentists. In ranking OHP limitations for the current practitioner/student, many checked lack of time/money.

Conclusions: Mostly younger dental hygienists view the BSDH in a positive light. Practicing dental hygienists view the OHP as a positive factor in providing more access to care and in advancing the dental hygiene profession. Future research should evaluate other stakeholders' responses to these important issues in dental hygiene education.

Acknowledgement: This study was funded through the Department of Dental Hygiene, Wichita State University.

16. Tobacco cessation training for the oral health care team

Sharon M Compton, RDH, BSc, MA, PhD
University of Alberta, Canada

Purpose: The project assessed effectiveness of workshop training for oral health professionals on changing practice to increase provision of an intervention for tobacco cessation counseling.

Problem statement: The dental/dental hygiene appointment provides a teachable moment for discussing patient's tobacco use and providing guidance and support. However, many oral health professionals do not address patient's tobacco use, citing lack of time, knowledge and confidence for providing an intervention.

Methods: Seven face-to-face interactive workshops were conducted in 7 urban cities in Canada. Dentists, dental hygienists and assistants participated. Workshop content included an overview of motivational interviewing, identification of Stages of Change, basic facts about pharmacotherapy and nicotine replacement therapies and 2 video vignettes of tobacco users discussing their quit attempts. Evaluation included pre- and immediate post-workshop surveys, a 3-week post workshop telephone interview and

a 3-month post workshop mailed survey. Surveys questions were formatted using 5-point Likert responses and written feedback.

Results: Numerical data from the 3 written surveys were entered using SPSS. Written responses were grouped according to specific themes. Data analysis are ongoing but preliminary analysis on 5 components has displayed similar trends. Each of the 5 components for the clinician's knowledge, motivation, skills, importance of providing an intervention and availability of time to complete an intervention show an increase immediately following the workshop compared to pre workshop responses. However, this decreases at 3 months post workshop training.

Conclusion: Preliminary analysis supports that the interactive workshop was successful in immediately increasing desired practices regarding tobacco cessation interventions by oral health professionals. However, the level decreased at 3 months, and further training or other resources may be needed to maintain implementation.

Acknowledgement: Funding for this project provided by Alberta Alcohol and Drug Abuse Commission.

17. Comparison of 1-year and 2-year degree completion students

*Bonnie J Craig, Dip DH, MEd, RDH; Susanne Sunell, EdD, RDH
Faculty of Dentistry, UBC, Vancouver, Canada

Purpose: To compare the academic success of 1 and 2 year dental hygiene degree completion students at the University of British Columbia (UBC).

Problem statement: The UBC Dental Hygiene Degree Program enables graduates with 2 and 3 years of post secondary education to earn a 4-year degree by building onto their diploma level education. It was important to explore the outcomes of these 2 options within the program.

Methods: The admissions and academic progress records of students from 1992 to 2008 (n=93) were analyzed to determine whether demographic variables were determinants of academic success. The analysis was based on graduating GPAs and was related to learners' continuation to graduate education. T-tests and ANOVAs were conducted to assess differences between students who required 1 and 2 years of academic work to complete the program.

Results: Data revealed that students are distributed across Canada but concentrated in British Columbia and Ontario. No statistically significant differences were found in the students who entered the third and fourth year with respect to the length of previous diploma education, years of practice experience, province of education and diploma GPA. To date, 25% of graduates have completed or are in a graduate program. Students who entered at the fourth year were more likely to pursue graduate studies than those who entered at third year.

Conclusions: The lack of difference in GPAs between groups upon graduation suggests that the third year of the degree program adequately compensates for any differences in dental hygiene background. Ongoing research is necessary to determine if this trend continues with the online approach introduced in 2006. Further investigation is also warranted to further explore the variables influencing the pathways to graduate education.

18. Assessing where and how dental hygiene students apply women's health knowledge

Joan C Gibson-Howell, RDH, EdD
Ohio State University College of Dentistry, Division of
Dental Hygiene

Purpose: These studies were to investigate the settings and methods dental hygiene students apply knowledge about women's health learned in school and investigate if there is a significant difference based on program degree.

Problem statement: Many women live in settings that prohibit access to oral health care and wellness. Having dental hygiene students provide oral health care education and services to women in alternative living situations promotes students' "experiential learning" and enhances self confidence.

Methods: Dental hygiene directors were surveyed in 2001 and 2007, and were asked what settings and methods students experienced to apply women's general and oral health knowledge. The response rate was 62.1% (159 out of 256) for 2001 and 25.34 % (73 out of 288) for 2007. The Over Dispersed Poisson regression and Fisher's exact test were used to analyze the data with JMP.

Results: Both surveys identified that students most commonly applied women's health knowledge in dental hygiene clinics, community/public health clinics and nursing homes. Other sites were hospitals, public/private schools, domestic violence shelters, penal institutions and rehabilitation centers. The most common methods of applying knowledge were research projects, course work with dental students and community based research. Other methods included interdisciplinary work with medical, nursing or allied health professionals, treating patients in clinic and schools. No statistically significant relationship was identified based on program degree.

Conclusions: It was identified that the most commonly applied setting and method were the dental hygiene clinics and research projects and, although it is evident that students are working with women in alternative living situations, there are different settings and methods that may be considered. It is important that dental hygiene students and professionals learn women's general and oral health issues and use, this information to improve women's access to health care in order to comprehensively treat females throughout life.

19. Implementation of a tobacco use intervention (TUI) program into clinical dental hygiene education

*Barbara D Strecker, RDH, MS, UTHSCSA; Renee Cornett,
RDH, MBA
Austin Community College, Texas
Mary E Jacks, RDH, MS
University of Texas Health Science Center at San Antonio

Purpose: A simplified tobacco use intervention (TUI) program was tested to determine if students can learn to address tobacco use and non use with patients. This involves brief cessation intervention with users and health promotion with non users. The program's effects on students' comfort, confidence and intentions to continue providing TUI in their future clinical practice were evaluated.

Problem statement: Educational institutions need curriculum components to prepare health care graduates with knowledge, skills and attitudes to effectively counsel tobacco using patients. Tobacco use is the number one preventable cause of disease and premature death in the USA. This includes both oral and systemic diseases.

Methods: This program focused on *simplified, brief interventions* with tobacco users (such as "Ask," "Advise" and "Refer" to cessation professionals), rather than on complex cessation counseling and pharmacotherapy. It also emphasized

health promotion with non users. A pre test/post test survey used 14 questions with a convenience sample of 16 second year students with a 100% response rate.

Results: Contingency tables demonstrated increased TUI health promotion with non users and brief cessation counseling with tobacco users, while complex cessation counseling decreased. Reports of comfort and confidence in providing TUI were stable or slightly increased. Students reported intentions to consider, plan or provide TUI to at least 75% of their future patients. SPSS sign tests did not demonstrate statistical significance, most likely due to small sample size. Responses to 3 questions, addressing asking about tobacco use and time spent talking about tobacco, approached significance at 0.065 to 0.180. Eleven items had significance levels >0.280.

Conclusions: This early study of the clinical TUI program indicated that it may have supported students' learning and provision of TUI for every patient. Simplified TUI programs during the formative education of dental hygienists may support their integration of TUI into the process of care that they provide with ease and consistency for their future patients.

...continued on 306

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The direct connection between oral health and overall health is becoming increasingly clear. Lung disease, heart disease, diabetes —what your clients don't know *can* hurt them.

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Canadian dental hygienists welcome Jacki Blatz as their new association President

Ottawa, 19 October 2009 — The Canadian Dental Hygienists Association (CDHA) is proud to announce the

Board's election of Jacki Blatz as the 41st President of the Board of Directors. In her new role, Ms. Blatz will provide a voice for over 15,000 Canadian dental hygienists during the association's 46th year.

Ms. Blatz has a long history of contributing to the dental hygiene profession at both the provincial and national levels. For the past six years, she has been a member of The College of Registered Dental Hygienists of Alberta's Board of Directors, where she served as President for two years. She has worked as a dental hygienist since graduating from the University of Alberta in 1985. In 2008, Ms. Blatz opened *Dentique*, an independent dental hygiene clinic in Fort Saskatchewan, Alberta.

"I am excited to be involved in our profession at this moment in time, and proud to serve Canadian dental hygienists as CDHA's president. This is my third year on CDHA's Board of Directors, and I look forward to new challenges and responsibilities," Ms. Blatz said.



▲ The Board at the entrance to CDHA's office in Ottawa.

Ms. Blatz's involvement in Alberta's regulatory college, her entrepreneurial spirit, and her demonstrated leadership qualities will be important assets as CDHA continues to fulfill its commitment to strengthening the dental hygiene profession and working to improve the oral health and general well being of the Canadian public.

"I would like to use this opportunity to thank Wanda Fedora for her active and successful engagement as CDHA President for the last year," said CDHA's Executive Director, Dr. Susan A. Ziebarth. "At the same time, I am delighted to welcome Jacki Blatz in her new role. CDHA's Presidents represent the best in our profession. I look forward to the memorable year ahead."

CDHA's Board of Directors, October 2009–October 2010



Jacki Blatz,
President;
Alberta



Wanda Fedora,
Past President;
Nova Scotia



Palmer Nelson,
President Elect;
Newfoundland
and Labrador



Bonnie Blank,
Educator
Representative



Anna Maria Cuzzolini,
Quebec



Arlynn Brodie,
British Columbia



France Bourque,
New Brunswick



Julie Linzel,
Prince Edward Island



Mary Bertone,
Manitoba



Maureen Bowerman,
Saskatchewan



Sandra Lawlor,
Ontario

Celebrating our HEROES...

The Canadian Dental Hygienists Association and Johnson & Johnson Inc., makers of LISTERINE® Antiseptic Mouthwash, are pleased to announce the three finalists of the DENTAL HYGIENIST HERO™ Recognition Program launched this Spring. **Heather Cooper** of Nanaimo, British Columbia, is the 2009 DENTAL HYGIENIST HERO™ taking home the \$1,500 cash prize. Also honoured for their remarkable dedication to enhancing oral care in their communities are **Caroline Lotz** of London, Ontario, second finalist, and **Melissa Butler** of The Pas, Manitoba, the third finalist.

CDHA is proud to recognize these three dedicated and committed dental hygienists, **Heather Cooper**, **Caroline Lotz**, and **Melissa Butler**, and to congratulate these truly inspiring DENTAL HYGIENIST HEROs™.

Stay tuned to CDHA's website www.cdha.ca to find out more on DENTAL HYGIENIST HERO™ for 2010.

New statement on antibiotics after joint replacement

The American Academy of Orthopedic Surgeons has updated the recommendations for premedication in patients with a joint prosthesis undergoing invasive dental procedures by dropping the "up to two years after implantation" rule. The original recommendation to stop prophylaxis after two years was based on a single study conducted in 1986. The committee found reasonable data to support the belief that bacteremia from oral procedures may result in total joint infections even several years later.

Despite serious health risks, Canadians continue to smoke

Statistics Canada has released the latest results of its Canadian Tobacco Use Monitoring Survey (CTUMS). Approximately 18% of Canadians said they smoked either every day or occasionally last year, clearly not an improvement from the previous year. The widespread availability of contraband tobacco, which sells for as little as \$6 for 200 cigarettes, could be to blame. CDHA strongly advocates to the federal government for decisive action on the contraband tobacco issue. A disturbingly high youth cigarillo use was also reported. Among teenagers aged 15–19, 31% reported having smoked cigarillos. Among young adults aged 20–24, 48% reported having smoked cigarillos.

CDHA's lobbying efforts paid off with the passing of Bill C-32, *An Act to Amend the Tobacco Act*, which received Royal Assent on 8 October 2009. This act bans flavoured cigarettes, cigarillos and blunt wraps at the manufacturer, import and retail levels.

Position for commercial advertisement

CDHA to provide dental hygiene services in Sioux Lookout Zone

CDHA is delighted to announce that we were successfully awarded a contract to provide dental hygiene services in Sioux Lookout Zone. CDHA has a longstanding history of advocating for government policy changes that would improve the oral health of First Nations and Inuit peoples in Canada, and increase access to dental hygiene service providers. In April 2009 we submitted a proposal to Health Canada for its Sioux Lookout Zone Dental Hygienist Services Program for First Nations and Inuit Health project. We received an overwhelming response of over 250 dental hygienists in Ontario who were interested in working on this project. Our proposal, which strongly aligned with the needs of First Nations communities, outlined a strategy for recruiting, hiring, and providing cultural education for dental hygienists to work in First Nations communities.

The Canadian Foundation for Dental Hygiene Research and Education Announces New President



CANADIAN FOUNDATION FOR
DENTALHYGIENE
RESEARCH AND EDUCATION

Ottawa, 19 October 2009 — The Canadian Foundation for Dental Hygiene Research and Education (CFDHRE) is delighted to welcome Dr. Laura Dempster as the new President of the Board of Directors. In this role, Dr. Dempster will promote the development of a body of knowledge for the dental hygiene profession to help advance clinical practice, education, and oral health outcomes.

Dr. Dempster is an Assistant Professor at the Faculty of Dentistry, University of Toronto, and the inaugural holder of the Kamienski Professorship in Dental Education Research. She received her PhD from the Institute of Medical Science, University of Toronto; MSc from the Department of Clinical Epidemiology and Biostatistics, McMaster University; and BSc in Dentistry (Dental Hygiene) from the Faculty of Dentistry, University of Toronto.

Her research focuses on both clinical and educational issues related to characterizing dental anxiety, the contribution of clinician interpersonal skills on client anxiety, and the impact of stress and anxiety on the cognitive and behavioural skills of oral health professionals.

"The Foundation's impressive record of raising funds and awarding grants to dental hygienists has generated a new emphasis on research that will help advance the profession. I am deeply committed to the mission of the Canadian Foundation for Dental Hygiene Research and Education, and I am honored to become part of its legacy," Dr. Dempster said.

Dr. Dempster succeeds Salme Lavigne, who has served as CFDHRE's President since the Foundation's inception in 2002. Ms. Lavigne's dedicated leadership helped position CFDHRE as a well respected organization that plays a unique role in shaping the future of the dental hygiene profession.

Together —

LET'S REACH HIGHER

The need to expand dental hygiene knowledge is growing and the opportunities have never been more exciting.

The Canadian Foundation for Dental Hygiene Research and Education is dedicated to seizing these opportunities — providing grants for dental hygiene research and education campaigns to enhance Canadians' oral health and the knowledge and skills of dental hygienists.

Your generous donation will help propel dental hygiene research and our profession to new heights.

CANADIAN FOUNDATION FOR
DENTALHYGIENE
RESEARCH AND EDUCATION

Please donate at <http://www.canadahelps.org>

Infection prevention and control measures for health care workers in long term care facilities

The Government of Canada has released a new guidance document for health workers in long term care facilities to prevent and control infections of H1N1 influenza. The document, titled *Guidance: Infection Prevention and Control Measures for Health Care Workers in Long-term Care Facilities*, addresses such issues as the use of masks and gloves, the need for early patient assessments, information sharing and appropriate use of isolation. Visit www.phac-aspc.gc.ca to access this document.

P&G Oral Health

CDHA is proud to announce P&G Oral Health as the Elite Member of **CDHA Partner's Circle**, the highest level of financial commitment possible. As an Elite member, P&G believes in recognizing and supporting the achievements of professionals and students, by funding awards offered through CDHA's Dental Hygiene Recognition Program. Additionally, P&G has just announced three new awards for 2010 that support research. In celebration of Oral Health Month 2010, P&G will once again be donating 400 oral health promotion kits to CDHA members to promote oral health education to Canadians. For complete details of the awards and programs that P&G support, visit www.cdha.ca

Dental hygiene research in Canada: Expanding knowledge and seizing new opportunities

CANADIAN FOUNDATION FOR
DENTALHYGIENE
RESEARCH AND EDUCATION

Dental hygienists in Canada continue to blaze new trails as researchers, and to build knowledge to enhance clinical practice, dental hygiene education, and oral health outcomes.

They are doing so with the support of the Canadian Foundation of Dental Hygiene Research and Education (CFDHRE), which, since 2005, has provided approximately \$88,000 to dental hygienists for innovative research projects. And a new partnership between the CFDHRE and the Canadian Institutes of Health Research (CIHR) is creating even more opportunities for the future.

Canada now has its first ever Doctoral Research Award in dental hygiene. Partnered with CIHR, the CFDHRE will award funding of up to \$66,000 for up to 3 years, for a dental hygiene research project developed by a registered dental hygienist pursuing a doctoral degree. Applications opened in the fall of 2009 with funding available for research in one of four priority areas: biomedical, clinical, health services, and social, cultural, environmental and population health research.

"This new award at the doctoral level is another significant advancement in the role of dental hygienists in oral health research," says Susan Ziebarth, Executive Director of CFDHRE. "It builds on the breakthrough achieved by our partnership with CIHR in 2008, through the Master's Award—the first CIHR supported grant specifically for dental hygiene research."

The inaugural Master's Award in dental hygiene research has been awarded. Carole J. Charbonneau—a community dental hygienist in West Vancouver who is pursuing an M.A. in Adult Education in the Faculty of Education at the University of British Columbia—will research options for including cultural competency courses in dental hygiene education programs.

The impetus is the growing evidence that ethnic minorities and First Nations people have poorer oral health and general health outcomes than the general population. There are a range of barriers contributing to these disparities, including cultural, and it is recognized that increased cultural competency in health education may help address the problem.

Cultural competency is not currently included in dental hygiene education, explains Ms. Charbonneau. "This is a relatively new concept and I hope that my project will not only bring awareness around the importance of providing culturally competent care to improve oral health outcomes in marginalized populations, but will also provide information for the development of dental hygiene curricula," she says.

Ms. Charbonneau says she is very grateful for the award, and is excited about the prospects for future research projects in dental hygiene. "Receiving this award has made me feel supported by the dental hygiene community. I also think that this award will encourage other dental hygien-

ists to pursue a master's degree and conduct research on a topic that they feel is important to the profession of dental hygiene."

Meanwhile, the dental hygiene community continues to reap the benefits of valuable knowledge created by CFDHRE's annual peer reviewed grants. Research associated with the 2008 grant is almost complete.

2008 PEER REVIEWED GRANT: PAULINE IMAI

As every dental hygienist knows, dental floss is considered the gold standard for disrupting the oral biofilm that contributes to gingivitis but the challenge is persuading clients to make flossing a daily routine.

That challenge was addressed in research funded by the CFDHRE's 2008 peer reviewed grant, led by Pauline Imai, Clinical Assistant Professor in the Dental Hygiene Degree Program of the UBC Faculty of Dentistry and her co-investigator, Penny Hatzimanolakis. Their 12-week clinical trial sought to determine whether an interdental brush is an effective, easy to use alternative to dental floss for reducing plaque and bleeding in people with gingivitis.

It is estimated that only 10 to 30 per cent of people floss daily. According to Ms. Imai, "Flossing may be the gold standard but unless clients use it, it is not going to be effective. The compliance rate is low due to a combination of lack of ability—a lot of people find it difficult to do—and lack of motivation."

The study followed thirty adults with gingivitis, who flossed on half the mouth and brushed interdentally on the other half. The results of the study are to be presented in two papers, one of which is to be published in the *Canadian Journal of Dental Hygiene*.

"We looked at two areas: efficacy of the two products, and the subjects' perceptions about use," says Ms. Imai. "On the motivation side of the equation, the subjects agreed that ease of use played a big role in their willingness to continue with an interdental aid. Most preferred the interdental brush and found it easier to use." (The efficacy results are yet to be released.)

These findings will assist dental hygienists in their practices, she adds. "It's very important for dental hygienists to understand the behavioural aspects of care. Every day we see people with gingivitis who don't want to floss. We need to understand how we can motivate the person sitting in our chair by asking, 'Is there an effective alternative they are more likely to use?'"

2009 PEER REVIEWED GRANT: SANDRA COBBAN

Numerous studies over the past twenty years have documented the comparatively poor oral health of elderly residents of long term care, but solutions for reducing this disparity are not as clear. With the support of the CFDHRE, Sandra Cobban plans to help fill that information gap.

Ms. Cobban, Associate Professor with the Dental

Hygiene Program in the University of Alberta's Faculty of Medicine and Dentistry, has received the foundation's peer reviewed grant for 2009. She is also a PhD student in the university's Faculty of Nursing. Ms. Cobban will undertake a systematic review of studies on interventions to improve the oral health of the elderly in long term care—synthesizing the findings and assessing where the best evidence lies. The review will focus on interventions that improve daily mouth care or can be provided by health care aides.

The need to find effective oral health interventions for residents of long term care is becoming more acute, she adds. Today, residents are more likely to be older, more functionally dependent and cognitively impaired, and to have their natural teeth.

"A few decades ago more people in residential care had dentures but a lot of them were cognitively intact and still providing their own care," says Ms. Cobban. "Today, residents have much heavier oral care needs. Care providers are encountering quite a few challenges, particularly in providing mouth care for individuals with dementia."

Ms. Cobban believes that systematic reviews are a good fit for dental hygienist researchers. "These research methods are well suited to dental hygienists. Most of them are highly organized, pay attention to detail and have an intense curiosity. And these kinds of investigations can be done without a large capital investment."

This type of research is of great value to dental hygienists, other care providers, and managers seeking evidence based practices and policies, she says. "There is so much research being published but practitioners and managers in long term care don't have time to search for and appraise every individual study. A systematic review identifies and assesses the quality of the studies, and allows us to see what the combination of these results is telling us."

ACKNOWLEDGEMENTS

This article was funded by the Canadian Institutes of Health Research. CFDHRE would like to thank Kathie Lynas for writing this article. ©CDHA

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As far as big steps forward go, this is a huge one... You can call it a giant leap for dental hygiene research and education in Canada.

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Summer is a particularly busy time of year for conferences, and this summer was no exception. Some dental hygienists attended and presented research findings at the North American Dental Hygiene Research Conference this past June in Bethesda, Maryland. As well, on 4 July, dental hygienists, Sandra Cobban, Eunice Edgington, Leeann Donnelly, and Jessica Dube attended and presented their research findings at the 19th World Congress of Gerontology and Geriatrics in Paris, France.

While all thoroughly enjoyed their time in Paris, they also remarked on the great opportunity it gave them to highlight the oral health needs of our aging society and the role dental hygiene can play in helping to better understand this. It also provided each a unique opportunity to

◀ Sandra, Leeann, Eunice and Jessica attended a reception with the Canadian Ambassador at Canada House in Paris for Canadian researchers and trainees, sponsored by the Canadian Institute of Health Research and the Quebec Network for Research on Aging.

meet, network, and learn from other researchers in their field of study.

Full abstracts are published in *The Journal of Nutrition, Health & Aging*, Volume 13, Supplement 1, 2009. Research poster titles that our four dental hygiene researchers presented at the conference are:

- Sandra Cobban: *Strategies for improving oral health in long term care: A scoping review.*
- Eunice Edgington: *Distance education in Gerontology for dental hygienists.*
- Leeann Donnelly: *Social interactions, body image and oral health among frail institutionalized elders.*
- Jessica Dube: *Stress and coping experienced by older adults challenged by dental implant self care.*

The editorial office of CJDH welcomes news of Canadian dental hygiene researchers' presentations, awards, grants, or recognition to showcase on this page, Research Corner. If you would like to highlight your own or another dental hygiene researcher's achievements, we'd like to hear from you. Contact Managing Editor, Chitra Arcot at journal@cdha.ca or the Acquisitions Editor Linda Roth at acquisitions@cdha.ca

2010 DENTAL HYGIENE PROGRAMS RECOGNITION AWARD

PRIX DE RECONNAISSANCE 2010 POUR LES PROGRAMMES EN HYGIÈNE DENTAIRE

The Canadian Dental Hygienists Association is pleased to announce the 2010 Dental Hygiene Programs Recognition Award. This award is designed to recognize dental hygiene programs whose faculty achieves 100% membership in the CDHA. A certificate of recognition will be awarded to honour these programs for demonstrating such outstanding commitment to their national association and acting as professional role models for their students. The deadline for submissions is **4 December 2009**. Entry details are available on the CDHA members' web site, in the "Networking and Recognition" section.

L'Association canadienne des hygiénistes dentaires est heureuse d'annoncer la création du Prix de reconnaissance pour les programmes en hygiène dentaire. Ce prix est conçu afin de reconnaître les programmes en hygiène dentaire dont 100 % du corps professoral est membre de l'ACHD. Un certificat de reconnaissance sera remis pour mettre à l'honneur les programmes dont les membres font preuve d'un engagement exceptionnel envers leur association nationale et jouent un rôle de modèles professionnels pour leurs étudiants et étudiantes. La date limite pour les inscriptions est le **4 décembre 2009**. Les détails concernant les procédures d'inscription sont affichés sur le site Web réservé aux membres de l'ACHD, à la section « Networking and Recognition ».



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

Improving cost effectiveness and program efficiencies in First Nations and Inuit Health Branch, Non Insured Health Benefits program

14 August 2009. Submitted electronically to:
House of Commons Standing Committee on Finance,
Pre-budget consultations. FINA@parl.gc.ca

EXECUTIVE SUMMARY

The Non Insured Health Benefits (NIHB) program of the First Nations and Inuit Health Branch (FNIHB) provides dental and dental hygiene services to eligible clients. Presently, dental hygienists in private business cannot be paid on a fee-for-service basis for NIHB clients, since there are no policies and procedures in place to allow reimbursement, unless dental hygienists are employed by a dentist. These NIHB policies and procedures have considerable negative impact on, and discriminate against dental hygiene business owners, and give dentists a considerable competitive advantage.

Historically, the NIHB requirement for dentists to submit invoices for dental hygiene services was in keeping with the provincial or territorial dental hygiene legislation, which required that dentists supervise dental hygienists. However, dental hygiene legislation now exists in Alberta (2006), British Columbia (1995), Manitoba (2008), New Brunswick (2009), Nova Scotia (2007), Ontario (2007) and Saskatchewan (2000) which enables dental hygienists to establish private businesses and to work without a dentist's supervision. This legislation enables dental hygienists to compete for services in the marketplace. The Canadian Dental Hygienists Association (CDHA) wants to encourage the federal government to share the benefits of this competition.

CDHA calls on the federal government to create new federal program spending policies and procedures within FNIHB's program, NIHB, to enable dental hygienists in private business to provide services to NIHB clients on a fee-for-service basis. One of the most important procedural

changes is to include dental hygienists in the NIHB service provider roster, to enable dental hygienists to be reimbursed on a fee-for-service basis. In response to a desire to improve business practices, increase competition in dental services, create cost effective dental services, and improve access to care, a total of twenty nine dental health benefit plans are now reimbursing dental hygienists directly for their services. NIHB must follow the leading standards sets by these dental insurance plans.

Reimbursing dental hygienists for services will magnify existing program benefits for NIHB clients through increased access to care. It will also support NIHB efforts to magnify existing program benefits and realize additional cost and program efficiencies. CDHA demonstrates the following primary benefits of this recommendation:

- Remove barriers in access to care:
 - Increased ability to meet an unmet need in the market for dental hygiene services.
 - Improved oral health for First Nations and Inuit peoples.
 - Improved client choice in provider.
- Promote cost effective service delivery models:
 - Reduced dental restoration and transportation costs.
 - Increased efficiency in the use of health human resources.
 - Increased capacity for dental hygiene services now and into the future.
 - Improved quality of care.
- Increase competition in oral health services:
 - Increased cost efficiencies.
 - Improved access to care.
 - Stimulate the development of small dental hygiene businesses.

Recommendation: That the federal government amend federal program spending policies and procedures within the First Nations and Inuit Health Branch (FNIHB), Non Insured Health Benefits (NIHB) program to enable dental hygiene business owners to provide services to NIHB clients on a fee-for-service basis. ©CDHA

Améliorer le bilan coût-efficacité et l'efficacité du Programme des services de santé non assurés à la Direction générale de la santé des Premières nations et des Inuits

le 14 août 2009. Présenté par voie électronique au :
Comité permanent des finances de la Chambre des communes, consultations prébudgétaires. FINA@parl.gc.ca

SOMMAIRE

Le Programme des services de santé non assurés (PSSNA) de la Direction générale de la santé des Premières nations (DGSPNI) offre des services de soins et d'hygiène dentaires aux personnes admissibles. À l'heure actuelle, les hygiénistes dentaires en pratique privée ne peuvent être rémunérés à l'acte pour les clients de la DGSPNI parce qu'il n'existe pas de politiques ou de procédures pour permettre

le remboursement de ces services, à moins que l'hygiéniste dentaire ne soit à l'emploi d'un dentiste. Ces politiques et procédures de la DGSPNI ont des conséquences négatives considérables pour les propriétaires d'entreprises de services d'hygiène dentaire, en exerçant une discrimination contre ces derniers et en accordant aux dentistes un important avantage concurrentiel.

Historiquement, l'exigence de la DGSPNI en vertu de laquelle seuls les dentistes pouvaient présenter des factures pour des services d'hygiène dentaire correspondait à la législation provinciale et territoriale sur les services d'hygiène dentaire, qui exigeait qu'un dentiste supervise le travail de l'hygiéniste dentaire. Cependant, des lois sur les services d'hygiène dentaire existent aujourd'hui en Alberta (2006), en Colombie-Britannique (1995), au Manitoba (2008), au Nouveau-Brunswick (2009), en Nouvelle-Écosse (2007), en Ontario (2007) et en Saskatchewan (2000), permettant

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L'ASSOCIATION CANADIENNE
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aux hygiénistes dentaires d'établir leur propre entreprise et de travailler sans être sous la supervision d'un dentiste. Ces lois donnent aux hygiénistes dentaires la possibilité de livrer concurrence en offrant leurs services sur le marché. L'Association canadienne des hygiénistes dentaires (ACHD) voudrait encourager le gouvernement fédéral à profiter des avantages qui découlent de cette concurrence.

L'ACHD invite le gouvernement fédéral à mettre en place de nouvelles politiques et procédures de dépenses au sein du PSSNA de la DGSPNI afin de permettre aux hygiénistes dentaires en pratique privée d'offrir leurs services à la clientèle du PSSNA selon une formule de rémunération à l'acte. L'une des modifications les plus importantes serait d'inclure les hygiénistes dentaires dans la liste des fournisseurs de services du PSSNA pour leur permettre de se faire rembourser leurs honoraires selon une formule de rémunération à l'acte. En réponse au désir d'améliorer les pratiques d'affaires, d'accroître la concurrence sur le marché des services dentaires, d'implanter des services dentaires efficaces et à bon coût et d'améliorer l'accès aux soins, vingt-neuf régimes d'assurance des soins dentaires remboursent aujourd'hui directement les hygiénistes dentaires pour leurs services. Le PSSNA doit suivre la norme dominante établie par les régimes d'assurance des soins dentaires.

Le remboursement des services fournis par les hygiénistes dentaires accroît les avantages que retire la clientèle du PSSNA grâce à un meilleur accès aux soins. Cela appuierait aussi les efforts faits par le PSSNA pour renforcer les avantages actuels du programme et de réaliser des éléments d'efficacité supplémentaires au niveau des coûts et de l'administration du programme. L'ACHD attire l'attention sur les principaux avantages qui découlent de cette recommandation :

- Supprimer les obstacles à l'accès aux soins :
 - Capacité accrue de répondre à un besoin non satisfait sur le marché des services d'hygiène dentaire
 - Meilleure santé bucco-dentaire pour les membres des Premières nations et les Inuits
 - Meilleur choix de fournisseurs de services
- Promouvoir des modèles de prestation de services efficaces et à bon coût :
 - Réduction des coûts de restauration dentaire et de transport
 - Plus grande efficacité dans l'utilisation des ressources humaines en santé
 - Capacité accrue de prestation de services d'hygiène dentaire, aujourd'hui et dans l'avenir
 - Amélioration de la qualité de soins
- Concurrence accrue sur le marché des services de santé bucco-dentaire :
 - Meilleur bilan coût-efficacité
 - Meilleur accès aux soins
 - Promotion du développement de petites entreprises d'hygiène dentaire

Recommandation : Que le gouvernement fédéral modifie les politiques et les procédures de dépenses dans le cadre du Programme des services de santé non assurés (PSSNA) de la Direction générale de la santé des Premières nations et des Inuits (DGSPNI) afin de permettre aux propriétaires d'entreprises de services d'hygiène dentaire d'offrir leurs services à la clientèle du PSSNA selon une formule de rémunération à l'acte. ©CDHA

Increasing cultural competence in the dental hygiene profession

Carole J Charbonneau, DipDH, BDSc (DH), RDH; Melina J Neufeld, DipDH, BDSc (DH), RDH; Bonnie J Craig, DipDH, MEd, RDH; Leeann R Donnelly, DipDH, BDSc (DH), MSc, RDH

ABSTRACT

North American societies are becoming increasingly diverse in their ethnocultural makeup. According to the Canadian Public Health Association, immigrants and refugees as well as Aboriginal people and people in such disadvantaged circumstances as the poor, elderly, and disabled are most vulnerable to disease, and experience the greatest degree of health disparities. Differences in cultural values, beliefs, and language are cited as barriers to accessing health care, and it is possible that health providers may contribute to these disparities by stereotyping, being prejudiced, and being clinically uncertain as to how to provide care to this population. Increasing cultural competence among health providers has been suggested as a possible strategy for reducing such disparities. These strategies include recruiting students and educators of ethnically diverse backgrounds to the health professions, and incorporating cultural education into the curricula in order to improve culturally sensitive communication, to foster respect for cultural differences, and to educate future health professionals in the process of culturally competent, client centred care. This paper discusses the need for increased cultural competency in dental hygiene with the intent of encouraging further research into this highly required area.

RÉSUMÉ

La composante ethnoculturelle des sociétés nord-américaines se diversifie de plus en plus. Selon l'Association canadienne de santé publique, les immigrants et les réfugiés de même que les peuples autochtones et les personnes défavorisées, notamment pauvres, âgées et handicapées, sont les plus vulnérables face à la maladie et souffrent des plus grandes disparités en matière de santé. On cite les différences entre les valeurs culturelles, les croyances et les langages comme autant de barrières d'accès aux soins de santé et il se peut que le personnel dispensateur de soins contribue à ces disparités à cause des stéréotypes, des préjugés et des incertitudes cliniques sur les façons de soigner ces populations. Comme stratégie de réduire ces disparités, certains proposent d'accroître la compétence culturelle du personnel soignant. La stratégie consisterait à recruter dans les professions de la santé des étudiantes et du personnel éducateur des divers milieux socioculturels, et d'intégrer la formation culturelle dans les programmes pour développer ce type de sensibilité dans la communication, favoriser le respect des différences culturelles et former les futures professionnelles dans la prestation de soins compétents, centrés sur la clientèle. Cet article traite du besoin d'accroître la compétence culturelle en hygiène dentaire afin de favoriser une éventuelle recherche dont on a grandement besoin dans ce secteur.

Key words: cultural competence, oral health, dental hygiene, dental care, ethnic groups, health care disparities, education

BACKGROUND

The ethnic origins of Canada's population are diverse. Although majority of Canadians share an immigrant past of European ancestry, the number of ethnic groups in Canada is growing, giving rise to a portrait that is increasingly multi ethnic and multi cultural.¹ An ethnic group is "a social group or category of the population that, in a larger society, is set apart and bound together by common ties of race, language, nationality, or culture".² A minority group is "an ethnic/racial group that has a smaller population than the controlling majority group in a society. Minority groups may also be based on shared gender, age, disabilities, political views, etc."³ Although over two hundred ethnic groups are listed in the Canadian census, the majority of immigrants arrive from various regions of South Asia and China illustrating the richness in our cultural profile.¹ According to the Canadian Public Health Association (CPHA), new immigrants and refugees, as well as Aboriginal people and people in such disadvantaged circumstances such as the poor, elderly, and disabled, are the most vulnerable to disease, and experience the greatest degree of health disparities in Canada.⁴

Since many areas of North America are becoming increasingly diverse in their cultural makeup, strategies need to be investigated to help ensure that all segments of the population are receiving the health care and oral health care that they need.⁵⁻⁷ Of current interest among health professions is that of cultural sensitivity and cultural competence.⁶⁻⁹

This is due in part to findings from the *Unequal Treatment* report in the USA which indicates that health providers may contribute to ethnic health disparities because of stereotyping, prejudice, and ignorance regarding how to provide care to diverse ethnic populations.¹⁰ In Canada, the report *Building on Values: The Future of Health Care in Canada* identifies ethnic minorities and Aboriginal people as vulnerable populations whose health is at the greatest risk, and advocates for development of strategies to address such disparities.¹¹

While a number of definitions of health disparities can be found in the literature,¹² for the purpose of this paper they will be defined as differences in health outcomes in the population, determined by factors that affect an individual or a group's environment, and predispose them to disease.¹³ Factors that commonly contribute to health disparities are socioeconomic status, education, gender, age, and ethnicity.^{5,6} These same factors contribute to oral health disparities which are often measured as differences in dental caries rates, periodontal disease, tooth loss, edentulism, oral cancer, and tobacco use.^{6,7} Although strategies to improve health and oral health outcomes have been

University of British Columbia

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Correspondence to: Carole J. Charbonneau; carole.charbonneau@vch.ca

suggested, the disparities still persist, and it appears that level of income and access to care are only part of the problem. This is particularly true with respect to oral health and has been demonstrated in the USA among certain ethnic groups such as African-Americans and Hispanics, who have a higher prevalence of oral disease regardless of income.^{14,15} The fact that those who do have the financial resources to access dental care still suffer from poorer oral health has led some people to explore how differences in cultural values, and how dental professionals are viewed, impact access to oral care.^{6,16-19} Studies conducted in Canada among recipients of government assistance in Quebec demonstrated the impact of those who felt offended by "hurtful" comments made by dental receptionists and dentists. The comments were stated as one of the reasons for avoiding the dental office or interrupting service, and opting for an extraction rather than endodontic treatment. Additionally, a survey of oral health among Canadians found that 70 per cent of respondents in the poor and disadvantaged populations often felt unwelcome at the dental office.²⁰ While the survey did have a low response rate, it does indicate that barriers to care, other than the financial situation, need further investigation.

Although the poor and disadvantaged populations are not considered an ethnic minority, the concept of culture does not encompass ethnicity entirely; it is much more complex, and extends to beliefs, values, common interests and common needs shared by a group.²¹ In the chapter *Cross Cultural Practice*, Darby and Walsh¹⁸ add further to the importance of culture in oral health care by stating "culture plays an integral role in dental hygiene because oral health and wellness, disease, and illness are culturally determined". Culture affects all aspects of daily life, and influences the oral health needs and attitudes of the client.

Objectives

The objective of this paper is to explore how cultural competence impacts health and oral health disparities among ethnic minorities and Aboriginal people as well as to suggest strategies for addressing inequities in health care. Due to the complexity and the vast amount of information available regarding strategies aimed at improving cultural competence among health professionals, it is not possible to fully review all proposed strategies in one article. For this reason, the authors have chosen to focus on cultural competence education and recruitment to begin to answer the question, "How can cultural competence be improved in the profession of dental hygiene to assist in client centred care?"

Methods

A literature search, limited from 2000 to 2009 was conducted through PubMed, CINAHL, PsychInfo, Google Scholar, and Sociological Abstracts using the following key words and their combinations: cultural competence, oral health, dental hygiene, dental care, ethnic groups, health care disparities, and education. In addition, a search of grey literature was conducted through Google and government websites. Of the total number of articles generated through this search, titles and abstracts were read and fifty three full

text articles were retrieved that were relevant to the focus of this review. A hand search was also conducted on reference lists of retrieved articles, which added two articles published prior to 2000 that were deemed significant and relevant.

What is cultural competence?

Multiple definitions exist for the term "cultural competence" with one of the first being "a set of congruent behaviors, attitudes, and policies that come together in a system, agency or amongst professionals and enables that system, cultural situations".²² Fitch⁹ states that cultural competence is "the ability to understand and attend to the total context of the client's situation: it involves knowledge, attitudes and skills". Fitch also describes cultural sensitivity as "the knowledge and constructive attitudes towards health traditions among diverse cultural groups", and cultural care as "health care that is culturally sensitive, appropriate, and competent, for the provision of care across cultural boundaries, taking into account the context of the clients' lives".⁹ Mouradian et al.²³ add that "cultural competency does not just mean acquiring facts about certain ethnic groups". Given the multitude of cultures and diversity of individuals within a culture such as that experienced in Canada, we must fall back on basic principles: self awareness, respect for diversity, and sensitivity in communication. Mouradian's definition suggests that in order to provide quality health care, a client's individual cultural background and our own biases should be taken into context so that we can consider how they might prevent delivery of the best care.

More recently, Perloff et al.²⁴ suggested that cultural competence is a process and not an outcome. This opinion touches on the idea that cultural competence cannot be achieved merely by learning how to act towards a particular group, but involves considering all aspects of the situation and adapting best practice to each individual's needs. Therefore, health professionals need to gain an understanding of each client's values as well as their own personal biases so that a balance can be reached during the delivery of care.²⁴

Since there are multiple definitions and terminology for cultural competence, it is recommended that health professions adopt their own definition for cultural competence in order to better understand the term and how to measure it.^{8,21} Schim et al.²¹ discuss incorporating cultural competence into the delivery of care involves practitioners understanding of culture that encompasses social behaviours, values and attitudes which are not only shared and learned but are also dynamic and diverse. To further emphasize the importance of complexity and dynamics of culture in oral health care, Darby and Walsh¹⁸ define cross cultural dental hygiene as "the effective integration of the client's socio-ethnocultural background into the process of care" and that "cross-cultural dental hygiene encompasses the social, political, ethnic, religious, and economic realities that people experience in culturally diverse human interactions and environments".¹⁸

In this paper, cultural competence is defined as a process in which an understanding of cultural attitudes, values, beliefs, and practices is used to help guide care for

an individual, taking into consideration specific history and needs, and avoiding the use of stereotypes and personal biases.

Financial barriers in accessing dental care

All Canadians have health insurance coverage regardless of socioeconomic status or the ability to obtain employment. Yet health disparities still exist, indicating the complex nature of access to care issues. Not surprisingly, these disparities are also evident with respect to oral health and may be attributable to dental care not being part of the universal health care system.

Generally, individuals with dental insurance receive more regular oral health care than those without.^{6,25} However, this is not true for Aboriginal people in Canada who, despite having access to federally funded dental insurance, known as Non Insured Health Benefits,²⁶ still experience significant oral health disparities. In the USA, similar findings have been reported by Vazquez et al.¹⁵ among African-American and Hispanic populations. Furthermore, attitudes towards oral health care can vary among those with dental insurance in some minority groups, indicating that culture needs to be explored in further detail to determine its impact on oral health outcomes and access to care.¹⁵ Vazquez et al.¹⁵ found that the Hispanic population may not utilize their dental or health insurance because they may not recognize the need for care, and that they tend to prefer walk in clinics where appointments and long wait times are not required. They perceive the US health care system of booking appointments and arriving promptly to be a barrier to accessing care, which contributes to low compliance and under utilization of dental and health insurance.¹⁵ A similar approach to exploring the attitudes towards oral health care and the usage of Non Insured Health Benefits (NIHB) by Aboriginal people in Canada would be beneficial in determining how cultural values might impact use of such benefits in this population. Moreover, studies such as those by Bedos et al.¹⁹ and Main et al.²⁰ might provide further information regarding the influence of cultural competence, and its impact on oral health disparities in the Aboriginal population.

Issues of inadequate cultural competence in health care and oral health care

To better understand cultural competence, it is necessary to outline cultural incompetence, and highlight some of the issues for consideration. The examples of Aboriginal people and Chinese immigrants illustrate some obstacles that have been encountered when seeking care.

Lack of understanding of cultural values, beliefs and traditions on the part of health workers is often cited as an obstacle faced by ethnic minorities and Aboriginal people when seeking health care.^{17,25} This lack of understanding not only results in ignorance as to how to treat individuals from a cultural background that is different from one's own, but it can also result in prejudice and inappropriate care.²⁷ An ethnographic study conducted by Hunter et al.²⁸ in 2006 explored how urban based Aboriginal people use traditions to address health issues. In depth interviews, observations and field notes were used to investigate culture, health care values and the utilization of health care

services among members of an Aboriginal health centre. Three major categories emerged from their analysis:

- (a) following a cultural path
- (b) gaining balance, and
- (c) sharing in the circle of life.²⁸

Holistic healing was evident across all three categories. The Aboriginal people believed that mainstream health care had "lost touch with the human side" and that people were treated as though they were part of a production line, resulting in care that offered little personal respect and dignity.²⁸ The study's participants feared losing their cultural values, and therefore feared approaching mainstream health care.²⁸ This study shows that understanding the cultural background of their clients may allow health professionals to provide such appropriate care as integrating a holistic approach to health care. Culturally competent health professionals would incorporate a client's beliefs and traditions into the treatment plan, ensuring the client's needs are met, and hopefully, increase access to care.

Communication is a key component of health care, and language barriers can greatly influence an individual's ability to access and receive effective care. Hamrosi et al.²⁹ explored the issues surrounding the inappropriate use of prescribed medications within Aboriginal communities in Australia to demonstrate the importance of effective communication.²⁹ The data collected via in depth interviews with Aboriginal health workers employed in community health centres and hospitals revealed that misuse of medication issues were related to limited understanding of the information provided about the medications.²⁹ The information was culturally inappropriate and difficult to understand. The format was not visually appealing, and contained no images that the Aboriginal people could relate to, or be enticed to pick up and read. Suggestions to improve this situation focused on adapting communication styles that would better relate to this population.²⁹

While the Aboriginal people of Australia and Canada are separate and distinct populations, and cultural diversity exists within the populations, they do experience comparable health disparities specifically with respect to oral health, cardiovascular disease, diabetes, and respiratory diseases.³⁰ Therefore, drawing on suggestions for improvement in communication to help address barriers to care among Australian Aboriginal people may prove to be appropriate in Canada as well.

Issues of communication and lack of understanding of traditions and beliefs held by dental professionals are highlighted in a study by Dong et al.⁶ with Chinese immigrants in Montreal. This study employed a qualitative approach to explore how oral illness was perceived, and how such perceptions influenced the care they sought and the value they placed on professional oral care. They found that the participants' perceptions of dental caries and gingival conditions were a combination of scientific dental knowledge and traditional beliefs. With regard to gingival swelling and bleeding, the traditional Chinese belief that an "internal fire"—created by stress, lack of sleep, and an unhealthy diet—caused the gingivitis. Some participants placed less value on professional dental care and more reliance on traditional Chinese medicine to address the problem. Interestingly, this was not the case with regard to

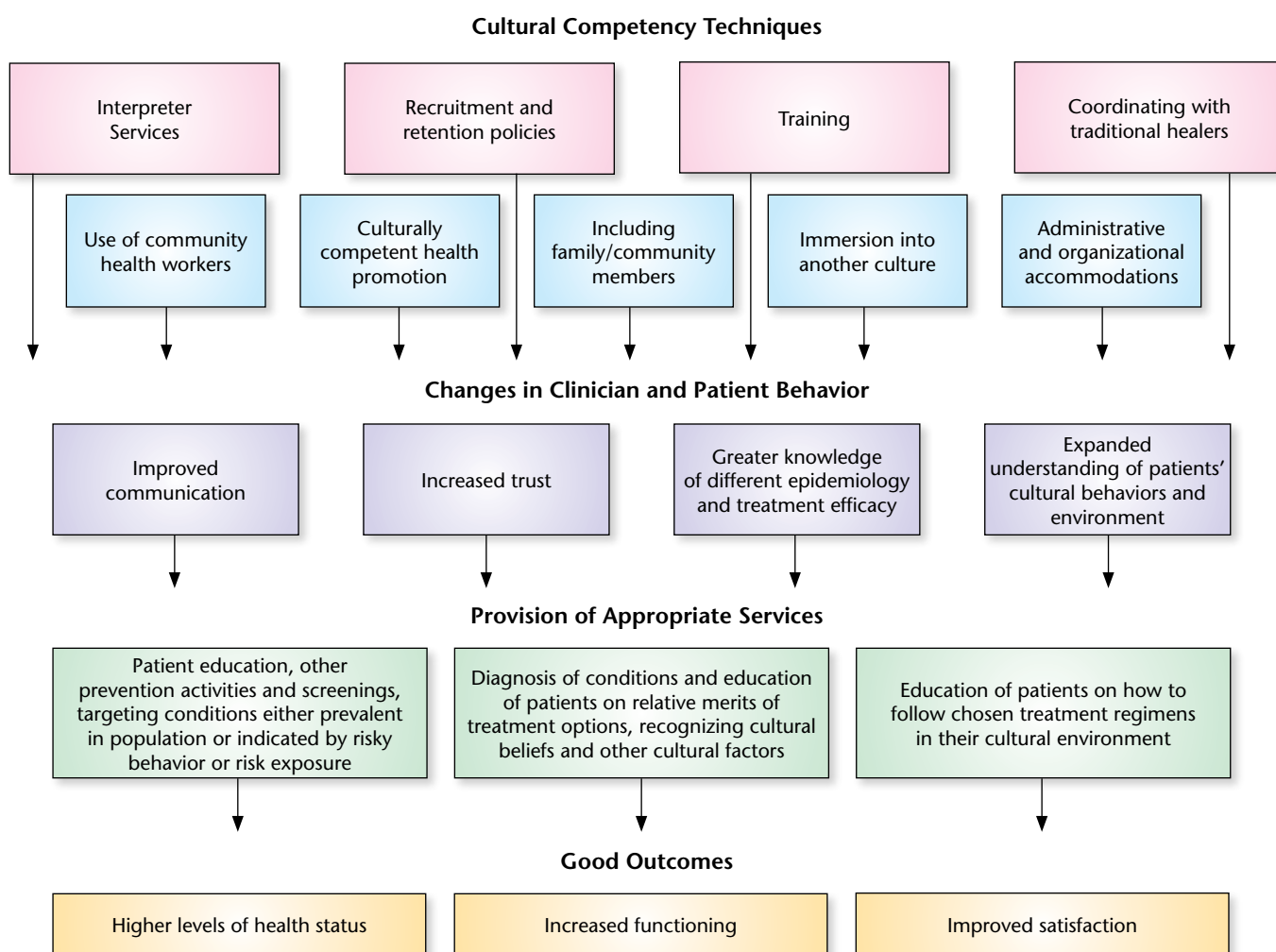


Figure 1: Conceptual model of how nine cultural competency techniques could reduce health disparities. Reproduced by permission of SAGE Publications. *Med Car Res Rev.* 2000;57(Supp 1):181–217. © Brach C, Fraser I.

caries. Although the participants still used traditional Chinese terms such as “tooth worm” to describe the etiology of the dental caries, they had a fairly good understanding of the scientific process, prevention, and treatment of the disease. This understanding ultimately influenced their decision to seek professional dental care. The authors suggested that public dental health care education in both China and Canada played a role in the participants’ increased scientific understanding of dental caries; and recommended that similar education be provided for other oral diseases. This study highlights that although participants were open to accepting scientific dental knowledge, their traditional beliefs were still important to them. The authors believed that dental professionals need to respect other cultural beliefs and should try to provide dental education to complement such beliefs in a manner similar to what has been done with dental caries. The authors concluded that dental professionals be more informed about the acculturation process, and how oral health perception varies among diverse populations, specifically new immigrants, to provide better care and communication.⁶

These studies demonstrate the importance of understanding other beliefs and values in order to deliver culturally competent care. However, to avoid the risk of stereotyping, health professionals must also be cognizant that these ideologies may not be reflective of all members of a particular ethnic or cultural background. Ultimately each client should be treated as an individual.

Conceptual model of cultural competence

Considering that inadequate cultural competence can result in avoidance of mainstream health care or ineffective treatment, it is important to explore how cultural competence can be improved among health providers. Romanow,¹¹ in his report, *Building on Values: The Future of Health Care in Canada*, discusses the importance of eliminating disparities in health outcomes based on race and ethnicity as a goal to improve the Canadian health care system.¹¹ A conceptual model of cultural competence such as that proposed by Brach and Fraser may aid in reducing these disparities.³¹ The model highlights nine strategies that could be used to increase cultural competence among health professionals (Figure 1). The model includes

interpreter services, recruitment, and retention of minority staff, training, coordinating with traditional healers, use of community health workers, culturally competent health promotion, including family, or community members or both, immersion into another culture, and administrative and organizational accommodations.³¹ Although all of these techniques are important, it will require more than one article to adequately address each technique. For this reason, the authors focus on two aspects of the model: recruitment of ethnic minority students and educators, and improved cultural education—important initial steps in increasing cultural competence in the dental hygiene profession.

Recruitment of culturally diverse health care providers

Mitchell and Lassiter³² discuss the topic of recruitment of underrepresented ethnic minority workers as a way to promote culturally competent care. They found that although ethnic minority populations are increasing dramatically, these increases are not reflected in the number of ethnic minorities entering health care education programs.^{32,33} The authors suggest that it is important to increase minority representation in health professions because they are more likely to provide care in underserved communities which often comprise minority groups.³² The authors conclude solving the problem at its source by increasing the exposure of health professions among minorities.³² The Dental Pipeline program in the USA is a community based program designed to address oral health disparities and increase access to care.³⁴ Funded by private donors, the program involves participation of fifteen US dental schools to increase the number of underrepresented minority students and low income students to increase diversity in the dental workforce and to provide senior dental students experience in community and client centred care. All fifteen schools had four years (from July 2003 to June 2007) to implement their programs. In February 2009, an evaluation framework for the Dental Pipeline program was developed by the National Evaluation Team at the University of California to provide support in evaluating the program, and evidence for expanding the Dental Pipeline program to other universities.³⁵ An evaluation of the Dental Pipeline program must demonstrate that its objectives are achievable, and that the program is sustainable without outside financial support for it to continue and expand. In addition to the workforce diversity issue, it is argued that minority students may not pursue a health career simply because they are not aware of the career options available.³² To respond to the health career awareness issue, it is suggested that campaigns be developed to increase the visibility of health professions.³² The authors also stress the importance of supporting minority students who have begun their health care education so they can succeed and graduate, and in turn help other underrepresented groups.^{32,34}

In addition to increasing exposure to health professions, other strategies may also be required to increase the number of diverse ethnic health practitioners. In their study of the Nursing Education Program of Saskatchewan (NEPS), Arnault-Pelletier et al.³⁶ discovered that Aboriginal students experienced culture shock when they

left their reserve to enter a health program at an urban centre, resulting in disinterest and discontinuation of these programs. In response to concerns about recruitment and retention of Aboriginal students in health programs in Saskatchewan, the Native Access Program to Nursing (NAPN) was established at the University of Saskatchewan with funding from Health Canada. Currently the NAPN model provides support and retention services for Aboriginal students, including support with the academic demands of postsecondary education; access to elders and culturally appropriate counselling; personal and academic advisement; advocacy for childcare, housing, and funding concerns; tutoring, mentorship, computer and Internet access; and a fall orientation for new students. The overwhelming success of the NAPN model was copied by many other institutions and programs, including the Health and Science Division of the Saskatchewan Institute of Applied Science and Technology (SIAST). The orientation also provides the students with the opportunity to practise their culture on campus through organized activities, meals, and shared accommodation to make the transition less intimidating. Twelve per cent of all seats available in 2006 were occupied by Aboriginal students, and at the time of writing this paper there are often more qualified Aboriginal applicants each year than available equity seats, suggesting that the program is succeeding.³⁶

Cultural competence education

In addition to recruiting ethnic minorities to health professions, cultural competence education is another important strategy to be considered to help reduce health disparities among ethnic minority populations. Although there is a recognized need for cultural competence education in health care across North America, the content and evaluation of cultural competence curriculum is inconsistent.³⁷⁻⁴² Furthermore, although frameworks for integrating cultural competence training into health care education have been described, there are no guidelines to help educators design or report cultural competence interventions.⁴² Despite these limitations, the evidence available for evaluating the effectiveness of cultural competence education suggests health professionals who participated in cultural competence education show an increased awareness and improved knowledge and attitude toward ethnic minorities.⁴¹⁻⁴⁴ Since studies evaluating cultural competence education in dentistry and dental hygiene are limited, we will draw on studies in health care to illustrate the impact of such education.

A case study conducted by Crandall et al. at Wake Forest University School of Medicine concluded that a year-long course in cultural competence improved students' knowledge, attitudes, and skills significantly.^{12,43} The course itself included experts on cultural health from around the world presenting topics involving race and ethnic diversity, social class, disability status, sexual orientation, and the influences of these circumstances on health status. The material was presented through lectures, videos, demonstrations, case studies, and patient interviews. The students were also required to design a project that would help meet a need in the community with respect to health care access for vulnerable populations.

Crosson et al.⁴⁴ evaluated a cultural competence course offered to first year medical students. The course employed a problem based learning approach in which the students worked through six cases with a mentor. During the cases, the students were introduced to the cultural and psychosocial issues facing multi generational ethnic minorities, as well as their health beliefs and practices. This provided them with the opportunity to develop strategies to improve communication with clients of diverse backgrounds and beliefs. In addition, the students gained practical experience by working in an ambulatory clinical setting with medical practitioners. They used their new skills in history taking and physical examinations. At the end of the course, students' attitudes and awareness towards the importance of assessing and responding to patients' cultural beliefs had significantly improved. However, the authors queried if these changes in attitudes would persist over time and recommended that further longitudinal research was required to determine if these changes could be maintained throughout the students' careers.⁴⁴

In contrast to the above studies, Assemi et al.⁴⁵ assessed the impact of an 8-hour elective didactic course on cultural competence for pharmacy students. They also found that the course could have a positive impact on the students' knowledge, awareness, and communication skills with respect to clients of ethnic minorities.

The different approaches to cultural competence education among health professionals raise the question of what type of education and experience are required for students to value and adopt culturally competent care.

Shapiro et al.⁴⁶ recently conducted a qualitative study using focus groups consisting of medical students who had received both didactic and practical training. Although the results revealed that the cultural competence education was "less effective at teaching interventional skills", the researchers discovered that most students thought both forms of education were useful and relevant.⁴⁶ The authors further emphasized the importance of the practical education since it allowed the students to implement their knowledge and skills, and to learn directly from the clients and other practitioners. In addition, the students preferred cultural competence education be integrated into the curriculum in the third year when they were ready to begin rotations. The students believed that this way they could apply the knowledge they learned immediately to practice, and thus better retain their newly acquired skills. This study emphasizes the issue that cultural competence is a dynamic process that needs practice, and that a curriculum which relies solely on a didactic approach to teaching the subject may not be ideal.^{25,39,46}

More studies evaluating the outcome of cultural competence education over time are needed to determine the best approach to this subject. Additionally, studies evaluating the outcome of cultural competence education in dental and dental hygiene programs are required to determine if such education can help reduce oral health disparities among ethnic minorities.

Cultural competence and the dental professions

Dental professionals have a responsibility to reduce barriers to care experienced by ethnic minorities by providing

culturally appropriate care. The number of people with an ethnically diverse background is growing in Canada and the USA, and there will be a greater number of these individuals needing dental care in the future.⁹ Communication has been proposed as an important aspect of culturally sensitive care since poor verbal and nonverbal communication can result in misunderstanding, lack of trust, anxiety, and inaccurate diagnosis and treatment.^{9,17}

Dental professionals need an accepting outlook towards beliefs and practices that are not their own, and an understanding that patients' cultural values are important, and should be integrated into their individual care plan.¹⁸ This involves an awareness that a variety of behaviours and beliefs towards oral health care exists, such as the preference of some Aboriginal people for a holistic approach to healing, or the reliance of some Chinese immigrants on traditional cultural beliefs to explain oral disease.^{6,29} Culturally competent practitioners are cognizant that there can be various contextual approaches to oral health care to improve their provision of care.

Culturally competent care in the dental setting can promote patient rapport and honour patient autonomy.⁴⁷ A dental professional is obligated to practise culturally competent care by treating clients with respect for their individual needs and values to provide the best possible care for them.^{9,18,47,48} Some instances may occur where a patient's cultural values and beliefs do not align with those of the dental professional who is treating them, and the professional may even believe it influences safe and appropriate practice. Such cases require a deeper understanding of both cultural practices and their relationship with ethical considerations for decisions to be made appropriately.

To illustrate some of the ethical challenges that dental professionals may face, Donate-Bartfield and Lausten⁴⁷ provide the example of a client requesting an elective treatment that may not be aesthetically pleasing to the dentist providing care, such as showing gold restorations in anterior teeth; however, the treatment requested may be important to the client's cultural background.⁴⁷ They also highlight the fact that dental professionals might not be aware of certain cultural norms such as the necessity for family consent, regardless of the client's age, prior to providing services.

Furthermore, it is argued that issues of social justice need to be emphasized and incorporated into dental and dental hygiene ethics courses in order for the students to recognize and understand the access to care and oral health disparities that currently exist in society.⁴⁹ Donate-Bartfield and Lausten highlight the link between multiculturalism and social justice, particularly in regards to access to care and respect for the client's decisions and cultural practices.⁴⁷ They suggest offering courses to dental students that require analyzing ethical dilemmas, and an understanding of the ethical issues of paternalism to better prepare students to provide care to a culturally diverse population. Beemsterboer⁴⁹ supports this view in stating that "more discussion and understanding around the professional contract that dentistry has with society in didactic and clinical courses might help sustain that message throughout the dental education program". It is important that cultural competence education in dental

and dental hygiene schools addresses ethical issues in conjunction with cultural understanding, communication, and traditional practices.^{9,47}

Haden et al.⁵⁰ state that dental professionals have an obligation to serve the public's best interests, and part of that means recognizing that vulnerable populations "have a unique priority". Their report to the American Dental Educators Association (ADEA) states that "oral health professionals must individually and collectively work to improve access to care by reducing barriers" and that this not only includes promotion of public health and advocacy for a model of oral health care that is more equitable, but it also includes the responsibility of academic institutions to educate dental professionals to be aware of their social responsibility, to be culturally competent, and to be prepared to work with a diverse population.

Dharamsi et al.⁵¹ explored the concept of social responsibility and its application by dentists in clinical practice. They discovered that because dentistry in North America is a private enterprise, there appears to be a conflict between dentists perceiving themselves as "business persons" and as "health care providers".⁵¹ From the authors' analysis, some dentists consider themselves ethically responsible to "take people out of pain and try to remove disease". However, any treatment beyond that was considered to be a luxury for those who could afford to pay the fees. Many felt there was a lack of guidance around social responsibility from the code of ethics within dentistry. Academic institutions must therefore prepare dental professionals to give more consideration to their social responsibility which includes providing care for an ethnically, culturally, and socially diverse population to ensure that their graduates are competent to care adequately for a changing society.

Recommendations for cultural competence in the dental hygiene profession

Cultural competence is not consistently taught across Canada, and suggestions have been made to incorporate cultural competence content into health care education to address the issue.^{8,21,39,41,52} In the dental hygiene profession, incorporating specific abilities into dental hygiene curricula could be an effective way to improve cultural competence. Another strategy to consider is to increase continuing education opportunities for practising dental hygienists who may not have studied this particular content as part of their undergraduate education. This could result in both new and experienced dental hygienists being better prepared to provide client centred care and ultimately improve the oral health of all Canadians.

Although a significant impact in increasing the access to oral care of ethnic minorities may be realized through cultural competence education for dental hygienists, it is important to recognize that increasing the number of dental hygienists with ethnically diverse backgrounds may have a positive impact.^{27,40,53,54} In doing so, the profession might ultimately increase diversity of dental hygiene educators. In their national survey of ethnic minority students dental hygiene programs in the USA, Dhir et al.⁵³ found that of all the oral health professionals, the dental hygiene profession is the least ethnically diverse.⁵³ They proposed that an educational environment consisting of ethnic

minority instructors would help minority students feel more comfortable and confident enough to succeed, since students from the same ethnic background as their professors are more likely to enroll and stay in programs.

There are similarities in Canada regarding the lack of ethnic diversity in the dental hygiene profession as demonstrated by Lux in her position statement on access to oral health services by Aboriginal people.⁵⁵ She emphasizes that, in addition to a lack of understanding of cultural issues by non Aboriginal health providers, there is also a lack of cultural representation in the Aboriginal communities in northern Canada. She recommends that "dental hygiene educational institutions develop admissions policies which take into account an awareness of demographic patterns and cultural needs of various communities".⁵⁵ Since the public seeks and has a preference for health providers who are of their own cultural background,^{17,40,53} the suggestion to change admissions policies should be considered. However, it should be noted that even with altered admissions policies, increasing ethnic diversity in the dental hygiene profession may be challenging and to date has not proven successful in dentistry among certain culturally diverse groups such as the Aboriginals.⁵⁵

In addition to changing admissions policies, such strategies as the NAPN could be used in more dental hygiene programs as a model since it has been successful in the Health and Science programs in Saskatchewan. The Dental Pipeline program may also prove to be successful, and could be adapted to dental hygiene programs in Canada. Because the profession of dental hygiene may not be well known or understood among ethnic minorities and Aboriginal people, it will also be important to take steps to increase its visibility among such populations. In doing so, those who may not have previously thought of a career in dental hygiene may consider it. This may best be accomplished by having dental hygienists and dental hygiene students visit schools, community centres, or reserves. Not only would this bring visibility to the profession, but it would also provide dental hygienists with valuable experience among these specific cultural groups.

CONCLUSION

It is clear from the literature that general health and oral health disparities are most prevalent among vulnerable populations. They include, but are not limited to, Aboriginal people, ethnic minorities, and new immigrants. Oral health professionals may contribute to these disparities due to their lack of knowledge and skills with respect to providing care for these populations. A better understanding of cultural values, norms, and beliefs as well as increasing the numbers of ethnic minority and Aboriginal oral health providers and educators may be possible solutions to these disparities.

Due to the integral role that dental hygienists play in oral health care, it is imperative they are prepared to provide client centred care within ethnically diverse societies. Dental hygiene programs and continuing education organizations could help accomplish this by providing more cultural competence education. As well, efforts need to be made to recruit members of various ethnic backgrounds to the profession of dental hygiene in order to

increase its ethnic diversity. Canadian society is becoming ever more diverse and steps need to be taken now by the dental hygiene profession to ensure that disparities in oral health do not persist or worsen. Cultural competence can be complex since diversity exists not only between ethnic groups but within them as well. While additional awareness, education, and an ethnically diverse profession can be important in beginning to address oral health disparities among populations, these strategies require further development and evaluation to determine the best course of action for our dental hygiene profession.

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...continued from 284

NEW PROGRAM

20. An experiential learning model for teaching social advocacy education

*Eunice M Edgington, RDH, BScD Med; *Janice FL Pimlott, RDH, BScD, MSc
University of Alberta, Edmonton, Canada

Purpose: Growing oral health disparities in vulnerable populations and increasing inequities in access to oral health care services are driving the need for change in oral health policy. In response the dental hygiene degree program at the University of Alberta provides an innovative curriculum to prepare graduates for the role of social advocate.

Problem statement: Education socializes dental hygienists for future role of advocate.

Method: This course simulates a realistic advocacy planning initiative where the class determines the advocacy issue. Each student participates in one of several advocacy planning committees: political action, coalitions, message, communication and issues. Community experts act as mentors to guide students through coordinated

activities specific to the individual committee responsibilities. Students work collaboratively with a high degree of communication to coordinate and synthesize their collective work toward the common advocacy goal. An experiential learning model based on concrete knowledge, reflection and active application is designed to move students' from passive dependent learners to motivated, autonomous and self directed learners. Using this pedagogical approach, the course content not only encompasses the theory of advocacy planning and health policy development, it also leads students to a broader range of skills, including problem solving, critical thinking, negotiation, facilitation and team development.

Results: Pre- and post test survey results showed that by participating in this course students gained a greater understanding of the advocacy planning components and process, an increased belief that they can contribute to oral health policy change and greater confidence and willingness to be involved in future advocacy initiatives.

CLINICAL DENTAL HYGIENE CARE (ORIGINAL RESEARCH)

21. How impactful are your recommendations?

*Wendy Bebey, RDH, BS; Sharon Efron, RDH, BS
The Procter & Gamble Company

Purpose: To understand the effectiveness of dental professional manual toothbrush recommendations to their patients.

Problem statement: Patients frequently look to the dental team to provide them with understanding about their unique dental health needs. The ability to effectively communicate evidence based clinical recommendations is critical to the success of promoting a healthy lifestyle and preventing disease in patients.

Methods: The US Nielsen Household Panel (HHP) Recommendation Analysis 2007-08 and the US Usage and Recommendation Study 2008 were utilized to compare the recommendation habits and recall between dental professionals and patients. The HHP survey was fielded to 53,000 representative sample online and non online households. Overall, 55,958 members from 38,428 households responded to the survey. The purchase data reflect consumer purchases from February 2007 through February 2008. The professional phone survey was taken from a nationally representative random sample of 200 dentists and 150 dental hygienists, geographically balanced by US Census divisions.

Results: The HHP survey indicated that:

- 63.6% of respondents went to the dentist within the previous 12 months.
- Forty-seven percent of the recommendations that patients remembered came from a dental hygienist and 20.1% from both the dentist and the dental hygienist.
- Of those receiving a recommendation, 93% received a free toothbrush sample when they visited the office.
- Interestingly, only 47% recall receiving a recommendation for a toothbrush.
- Sixty-four percent of dental professionals believed they gave their patients a branded manual toothbrush recommendation but
- Only 18% of patients recall being instructed that a certain brand of toothbrush is preferred.

Conclusions: The survey confirms that the majority of recommendations that patients remember come from their dental hygienist. While the data presented pertain to manual toothbrushes it has broader implications on the role of the dental hygienist in closing the gap between intended and recalled recommendations, especially when evidence based treatment decisions are being communicated to patients.

Acknowledgement: Funding for this study was provided by The Procter & Gamble Company.

22. Oral malodor—comparison of subjective and objective measurements

*Rebecca Van Horn, RDH, BA; Beth Jordan, RDH, BS
The Procter & Gamble Company

Purpose: To understand the strength of the relationship between subjective organoleptic and objective instrumental measures of oral malodor.

Problem statement: While second person grading is often considered the “gold standard” method for measuring oral malodor, it is highly subjective, making evaluation of available literature problematic. The addition of objective measurements of oral malodor should allow for more systematic interpretation of product efficacy.

Methods: This randomized and controlled crossover clinical trial compared the breath protection effectiveness of 0.454% stabilized stannous fluoride (SnF₂) dentifrice to a 0.243% sodium fluoride (NaF) negative control dentifrice over 24 hours in 29 healthy adults. Subjects brushed twice daily, with breath quality evaluated at 1.5, 3, 8 and 24 hours after initial dosing by monitoring of volatile sulfur compounds (VSCs) using a halimeter and second person organoleptic grading. A washout of 2 to 3 days followed between treatment periods. The natural logarithm of total

VSCs measured by a halimeter and the organoleptic assessments by a panel of 4 judges was analyzed using analysis of covariance. Pearson correlation coefficients were computed separately at each time point to measure the strength of the relationship between the organoleptic scores and the VSC levels.

Results: The SnF₂ dentifrice provided significantly superior reductions in VSCs relative to the NaF negative control when measured via a halimeter and odor-judges ($p < 0.05$). The Pearson correlation coefficients between the organoleptic scores and the VSC levels across all study evaluation time points were positive, ranging from 0.59 to 0.77, with an overall correlation of 0.88.

Conclusions: The result of the positive correlation between the halimeter and organoleptic data generated in the trial confirms the relationship which exists between an objective method of breath evaluation versus the subjective second person breath perception. The objective VSC measures allow for reliable assessment of product efficacy, which may be easily translated to a clinical setting.

Acknowledgement: Funding for this study was provided by The Procter & Gamble Company.

23. Enamel fluoride uptake and antimicrobial effectiveness of an herbal fluoride mouthrinse

Carlos González-Cabezas, DDS, PhD
Indiana University Oral Health Research Institute
Anne D Haffajee, BDS; Tina Yaskell, BS
The Forsyth Institute
*Connie Gregson, MS
Natural Dentist, Inc.

Purpose: The objectives of the study were to determine the Enamel Fluoride Uptake (EFU) of The Natural Dentist Anticavity Fluoride Rinse (TND) and to determine its antimicrobial effectiveness as measured by its Minimum Inhibitory Concentration (MIC) against predominant oral pathogens.

Problem statement: Natural oral health products are alternatives if they demonstrate comparable or greater effectiveness as compared to conventional products.

Methods: For the EFU, human enamel specimens were prepared. Each sample was demineralized and pretreatment fluoride and calcium contents were measured. A caries like lesion was formed in each specimen, and the specimens were treated with the assigned mouth rinse (TND, ACT or Phos-Flur). Post treatment specimens were demineralized

and the resulting solutions were analyzed for fluoride and calcium. For the MIC, an agar dilution method was used to test the agents against 44 oral bacteria. Serial dilutions of TND and Listerine were prepared. The media and the test agents were prepared into petri plates and inoculated with the cultured bacterial species. The MIC was interpreted as the lowest concentration of the agent that inhibited the growth of the test species.

Results: Fluoride uptake was calculated by subtracting the pretreatment level of fluoride from the post treatment level. A 1-way analysis of variance model indicated significantly greater EFU with TND and Phos-Flur as compared to ACT ($p < 0.05$). Regarding the MIC, TND inhibited the growth of all 44 bacterial species tested. For several oral pathogens, TND had significantly lower MICs in comparison to Listerine.

Conclusions: The data from these *in vitro* studies indicate effectiveness with TND Anticavity Fluoride Rinse in terms of fluoride uptake and antimicrobial activity.

Acknowledgement: Funding for this project supported by Natural Dentist, Inc.

24. Dental hygienists' social sensitivity regarding access to dental care issues for the underserved population

Lynn A Marsh RDH, BSDH, MS
Farmingdale State College, NY

Purpose: This research project investigated the perception of dental hygienists regarding the access to care issues and solutions of children and the aging population.

Problem statement: Dental care is critical to the overall health and well being for the population. The demand for dental services among the elderly to preserve their natural teeth has continued to increase, despite this population facing a limited income.

Children are included in the underserved population as the number of children without dental care available to them continues to grow. Barriers to care must be overcome to assist the underserved population receive dental treatment.

Methods: Seven dental hygienists participated in this study through qualitative face-to-face, 1-on-1 interviews with open ended questions. The randomly chosen participants included registered dental hygienists, dental hygiene educators, government employed dental hygienists and

dental hygienists within the state association. Responses were coded for key words in context, ideas and concepts.

Results: The average of the participants practicing dental hygiene was 20.5 years. Each participant indicated that some type of service should be provided for the underserved population. Four participants responded that dental schools and public services should be responsible for the underserved population. Three participants responded that dental health professionals should volunteer time to provide care to the underserved population. Only one participant felt there was a social responsibility for oral health professionals to provide care for the underserved population. The goal of all participants was to help people attain optimum oral health which in turns aids in optimum overall health.

Conclusions: The perception of participants in this research study was that of placing the responsibility of the underserved population on dental schools and public services for treatment rather than on dental hygienists. Additional research is necessary to add validity to this study.

25. Bisphenol a blood and saliva levels prior to and after dental sealant placement in adults

Joyce M Downs, RDH, MS; *Deanne Shuman, BSDH, MS, PhD; Robert Ratzlaff, PhD (School of Life Sciences); Sharon Stull, BSDH, MS
College of Health Sciences, School of Dental Hygiene, Old Dominion University, Virginia

Purpose: The purpose of this study is to examine the presence of bisphenol A (BPA) in saliva and blood after placement of pit and fissure sealants in adults.

Problem statement: Sealants are formed by reacting glycidyl methacrylate with BPA. BPA is a hormonally active, synthetic chemical that is part of a broad group of chemicals known as endocrine disrupting compounds, xenoestrogen, which mimic bioactivity of estrogen. Laboratory studies using rodents with BPA exposure as low as 2.5ug/kg body weight/day reveal increased fertility and mammary and prostate cancer. BPA leaches from a dental sealant if not completely polymerized and is released into the oral cavity as a degradation product.

Methods: Subjects were 30 adults, 18 to 40 years of age, of mixed gender and ethnicity. Internal Review Board approval (#05-070) was granted prior to study initiation. BPA was measured using a direct-competitive Enzyme Linked ImmunoSorbent Assay. Differences in BPA comparing low-dose (1 sealant) and high-dose (4 sealants) groups

were examined at 1 hour prior, 1 hour post, 3 hours post and 24 hours after sealant placement using saliva samples. Blood samples were collected 1 hour prior and 1 hour post sealant placement. Data were analyzed using a parametric, 2-way analysis of variance for repeated measures, 0.05 alpha level.

Results and Conclusions: BPA was detected in saliva of all subjects prior to sealant placement and ranged from 0.07-6.00 ng/ml. Salivary BPA levels peaked at the 3 hour period following placement and returned to baseline levels within 24 hours. BPA was significantly elevated at all post sealant placement time periods for both low-dose and high-dose sealants groups, with peak levels of 3.98 ng/ml and 9.08 ng/ml, respectively. BPA was not detected in serum samples after sealant placement. Detectible BPA concentrations at baseline signify exposure to BPA from sources other than sealants. Results from this study will assist practitioners in product selection and usage protocol.

References: Downs J, Shuman D, Stull S, Ratzlaff R. Bisphenol A Blood and Saliva Levels Prior to and After Dental Sealant Placement in Adults. Abstract. *J Dent Hyg.* 2007;Oct(4):108.

Acknowledgement: Funding for this project was obtained from the American Dental Hygienists' Association Institute for Oral Health.

26. Comparison of a novel interdental brush to dental floss for reduction of plaque and bleeding in sites of intact interdental papillae: a randomized controlled clinical trial

*Pauline H Imai, CDA, DipDH, BDSc (DH), MSc (DSc), RDH;
Penny Hatzimanolakis, DipDH, BDSc (DH), MSc (DSc), RDH
Faculty of Dentistry, University of British Columbia
Bill Mercer, PhD
Projects Applied Research & Evaluation & Evaluation
Services, University of British Columbia, Canada

Purpose: To compare the efficacy of interdental brush to dental floss for interproximal plaque and bleeding reduction in subjects with intact interdental papillae.

Problem statement: Periodontal disease is prevalent interproximally, yet compliance with dental floss is low because of lack of ability and motivation. The interdental brush is an easy to use, self care aid, but is it effective for treating early disease when the papilla is intact?

Methods: Examiner blinded, split mouth, 3-month, randomized controlled trial comparing interdental brush to positive control and dental floss on premolars and molars in 32 healthy adults with intact, but bleeding interdental papillae. Silness and Loe plaque and Eastman bleeding indices conducted at weeks 0, 6 and 12. Subjects received non surgical debridement 2 weeks prior to baseline. Interdental brush size determined with Curaprox color coordinated probe. OHI at Weeks 0 and 6, modified Bass twice a day, flossing once a day and interdental brush inserted in/out

once a day. All oral health products controlled. Subjects complete a 4-item questionnaire at week 12 to compare products ease of use, preference and provide comments. Study has received ethical approval from UBC Clinical Ethics Research Board (#H08-01078).

Preliminary Clinical Results: One-way ANOVA. Statistical unit: interproximal site. The interdental brush and floss were not statistically different for plaque and bleeding scores at:

- week 0 (n=240 sites, p=0.262; n=240 sites, p=0.243 respectively),
- week 6 (n=162 sites, p=0.739; n=160 sites, p=0.062 respectively) and at
- week 12 (n=85 sites, p=0.876; n=86 sites, p=0.215 respectively) with alpha at 0.05, df=1.

Conclusion: Preliminary clinical results indicate that the interdental brush removes interproximal plaque and reduces bleeding as well as dental floss in subjects with intact interdental papillae. Subjects' qualitative feedback for the interdental aids will be determined at study completion.

Acknowledgement: Funding for this project was obtained through CFDHRE, BCDHA, Enterprise Dentalink Inc. (Curaprox Swiss) and the Faculty of Dentistry, UBC.

27. Perceptions of individuals who frequently vs. occasionally whiten their teeth

*Terri SI Tilliss RDH, PhD; Kari Amick, DMD
Department of Dental Hygiene, University of Colorado
School of Dental Medicine

Purpose: The objective of this study was to compare perceptions of a group who frequently whiten (FWG) their teeth to achieve the whitest shade possible, with a group who are satisfied with occasional whitening (OWG).

Problem statement: There is not enough dialogue between patients and practitioners concerning expectations of whitening outcomes. Practitioners need to initiate this dialogue so that consensus on color shade can be reached.

Methods: Twenty individuals in each group were recruited through email from faculty, students and staff of a large university health sciences campus. Inclusion criteria for both groups included age 18 to 60, self reported history of whitening and no history of dental industry employment for self/family. Inclusion in FWG also required a history of frequent whitening and teeth matching 1 of the initial 4 shades of the VITA Bleachedguide 3D-Master. A 30 minute, 2-part oral interview was conducted with all subjects, which consisted of a 43-item questionnaire exploring perceived

values and attitudes about teeth and a photographic survey of 22 digitally retouched stock photographs depicting 11 individuals with both a lighter and darker dentition shade. Subjects were asked to estimate the age of the individual pictured, to evaluate the appropriateness of tooth color and to explain their answers. Responses were tallied and constant comparative analysis utilized for qualitative data.

Results: FWG is somewhat more likely than OWG to evaluate age as younger when teeth are lighter. Also, FWG is more likely to feel that brighter teeth are "just right" and darker teeth "too dark". OWG is somewhat more likely to assess that brighter teeth are "too light" than FWG. When asked what the appearance of one's teeth communicates to others, the most frequent answer from both groups was "overall health and well-being".

Conclusion: Differences in perceptions between individuals with varying whitening expectations can guide oral health care providers during consultation. Use of serially whitened photographs, such as those utilized in this study, can assist practitioners in initiating the necessary dialogue for reaching consensus on whitening expectations.

28. Role of oral/dental procedures in causing infections associated with vascular access devices in hemodialysis patients

*Sandra D'Amato-Palumbo, RDH, MPS; Rajesh V Lalla, DDS, PhD, CCRP

Department of Oral Health and Diagnostic Sciences,
University of Connecticut Health Center
Andre Kaplan, MD
Department of Nephrology, University of Connecticut
Health Center, Farmington, Connecticut, USA

Purpose: To identify the specific microorganisms responsible for infection associated with vascular access in patients undergoing hemodialysis; to determine the potential role of oral/dental procedures in causing infection associated with vascular access in these patients.

Problem statement: Each year, approximately 40% of hemodialysis patients have an infection related to the dialysis access site, leading to significant morbidity. Consequently, physicians or dentists often prescribe prophylactic antibiotics to prevent vascular access infection (VAI) in patients on hemodialysis undergoing invasive dental treatment. However, there is no evidence that dental procedures lead to VAI. Further, antibiotic prophylaxis may lead to allergic reactions, emergence of resistant species and increased health care costs. There is a pressing

need for collecting additional data on whether oral microorganisms can lead to infections associated with vascular access in hemodialysis patients.

Methods: This IRB-approved retrospective study was conducted using an electronic medical record system. VAI data were collected on 218 patients receiving hemodialysis for various periods between January 1, 1999 and February 27, 2009. Diagnosis of VAI was confirmed by review of clinical notes and laboratory testing. A range of culture results were collected from blood, urine, sputum, catheter tips, fistula and/or graft sites. Specific microorganisms identified in association with each infection were recorded. Data were recorded and analyzed in an Excel database.

Results: Of the 218 patients, 103 (47.25%) had at least 1 VAI associated with their hemodialysis. The predominant microorganisms associated with the VAIs were *staphylococcus* and *enterobacter* species. In very few cases, organisms indigenous to the oral cavity were associated with VAIs.

Conclusions: Results suggest that oral microorganisms are rarely associated with VAI. Thus, routine oral manipulation does not have a significant role in causing such infections. Further, the data suggest that routine antibiotic prophylaxis for dental procedures may not be necessary.

NEW PROGRAM

29. A simplified table to identify pediatric dental clients needing further evaluation of blood pressure

Frieda A Pickett, RDH, MS

Former Associate Professor, Caruth School of Dental
Hygiene, Baylor College of Dentistry, Dallas TX

David C Kaelber, MD, PhD, MPH

School of Medicine, Case Western Reserve University,
Cleveland, Ohio

Purpose: To create a tool to easily identify pediatric clients with elevated blood pressure (BP) who need referral for medical evaluation of BP.

Significance: In 2004, new guidelines (Fourth Report) were published regarding the diagnosis, evaluation and treatment of high blood pressure in children and adolescents. The guidelines recommend screening BP from ages 3 to 18 to be taken at all visits for health care, including dental appointments. The charts within the guidelines require distinguishing between 7 height percentiles to identify elevated BP. Seventy-four percent of pediatric hypertension is undiagnosed. Hypertension in childhood can lead to cardiovascular disease in adulthood. Providers cannot easily determine elevated values based on height percentiles. Tools and strategies need to be developed to aid health care practitioners in detecting pediatric clients who have

BP above the normal limits.

Methods: A simplified abnormal BP table to identify children and adolescents who need further medical evaluation of BP was developed. This table relies only on knowledge of the gender and age and is based on the Fourth Report. The simplification is done by taking the lower limit of the abnormal BP for a given gender and age, regardless of height, resulting in a single systolic and diastolic blood pressure. Any BP reading greater than or equal to the chart values are prehypertensive or hypertensive and should be medically evaluated. This table provides an opportunity to screen pediatric patients for elevated BP when a height measurement is not available.

Evaluation: This approach provides a simplified table for screening BP, with 100% sensitivity for identifying abnormal pediatric values. While 100% sensitive, this approach will produce some false positive results in children within the tallest height percentile. However, given the significant underdiagnosis of pediatric hypertension and the potential effects on cardiovascular health from chronic hypertension, we feel this is a positive trade off.

No funding for this project was received.

TECHNOLOGY (ORIGINAL RESEARCH)

30. Course management systems: implications for hybrid course development

Maureen Tsokris RDH, MPS; *Maureen Capone RDH, MS
Farmingdale State College, NY
Helen C Wittmann, EdD; Elsa-Sofia Morote, EdD
Dowling College, NY

Purpose: The purpose of this study was to examine whether faculty conceptions or misconceptions regarding the use of hybrid instruction differ between faculty teaching in traditional classroom settings who utilize course management systems (CMS) and faculty teaching in traditional classroom settings who do not utilize CMS. In addition, this study examines whether faculty who are utilizing a CMS are more willing/and or likely to develop a hybrid course.

Problem statement: Faculty misconceptions regarding hybrid instruction may prevent educators from utilizing new technologies in course development.

Methods: One hundred and twenty-nine faculty at 4 independent institutions of higher education in New York State responded to an online survey. In addition to basic demographic information, the survey contained 14 conceptual questions regarding hybrid learning, which required either a true, false or no basis for knowing response. Ninety of the respondents taught in a traditional classroom setting. Forty-nine of those were teaching in traditional classroom settings utilized CMS.

Results: Data from this survey were analyzed by performing independent samples t-test, frequencies and cross

tabulation. Data analysis indicated:

- Faculty who teach in traditional classroom settings utilizing CMS have less misconceptions in regard to hybrid learning than faculty who teach in traditional classroom settings who do not utilize CMS.
- More specifically, 53% of faculty who utilized a CMS responded correctly to the statement “teacher student interaction is difficult when using hybrid learning technology to deliver instruction”, as compared to only 29.3% correct responses by those who do not use a CMS.
- Similarly, in response to the statement “cheating in a hybrid course is a common threat to the quality of hybrid courses”, 29% of those who use a CMS answered incorrectly while 46% of those who do not use a CMS answered incorrectly.
- Eighty-nine percent of faculty who were utilizing a CMS responded positively to the question, “In the future would you use hybrid learning to deliver instruction?”

Conclusions: Results of this study suggest institutions of higher learning should encourage faculty to utilize CMS as a transition to distance education. In addition, faculty development workshops designed to address the common misconceptions held by faculty in regard to hybrid learning may encourage more faculty to participate in this method of delivering course instruction.

31. Clinical assessment of remineralization from fluoride varnish treatments

George K Stookey, PhD; *Amy J Nuñez, LDH, BS; Maki Minami DDS, PhD; Jun Ge, PhD; Denise A Allen, LDH, BS
Therametric Technologies, Inc., Indianapolis, IN
Roger L Issaacs, DDS
Oral Health Research Institute, Indianapolis, IN

Purpose: The purpose of this study was to determine the ability of a new fluorescence assessment instrument to detect the effect of a fluoride varnish on white spot lesions in a small group of children within a 6-month period.

Problem statement: Traditional methods for detecting caries (visual, tactile and radiographic) cannot detect the early, non cavitated stages of development. Once cavitation has been identified, lesion reversal is impossible. Consequently, there is a need to detect early stages of demineralization, because non cavitated lesions are completely reversible.

Methods: Forty-eight children ages 7 to 17 participated in this study. All participants had 2 white spot lesions. Subjects were stratified by age and gender, and were randomly assigned to 2 groups that received a series of 4 weekly applications of either a fluoride or placebo varnish. The white spot lesions were examined clinically at baseline,

3 weeks, 3 and 6 months using ICDAS criteria and fluorescence measurements with QLF and an early prototype of a new instrument, FluoreCam. Change from baseline was calculated for each of the outcomes measured using the analysis of variance (ANOVA) model. Treatment comparisons were conducted by modeling these changes with a linear model including fixed effects for treatment, month and treatment-by-month interaction.

Results: None of the examination methods detected significant differences between groups in changes from baseline prior to 6 months. At 6 months, the results from ICDAS and QLF exams showed non significant directional differences. However, a statistically significant difference ($p < .05$) occurred between the fluoride group showing remineralization (-6.3) and the placebo group showing demineralization ($+30.9$) where $p=0.0498$.

Conclusions: The use of the FluoreCam instrument permitted the detection of the ability of a fluoride varnish to remineralize incipient carious lesions in a small group of children within a 6-month test period.

Acknowledgement: This investigation was funded by the NIH/NIDCR.

32. An analysis of student performance benchmarks in dental hygiene via distance education

Jodi L Olmsted, RDH, PhD
University of Wisconsin, Stevens Point, WI

Purpose: Currently 3 graduate, 35 undergraduate and 12 dental hygiene degree completion programs in the USA are using varying forms of distance learning (DL) for course offerings. A 10-year, longitudinal examination considered student performance differences in a distance education (DE) dental hygiene program. The purpose of this research was to determine if there were differences in performance between learners taught in a traditional classroom compared to their counterparts taking classes through an alternative delivery system.

Problem: Relying heavily on DL for offering educational programs leaves an unanswered question: Is learner performance on standardized benchmark assessments impacted when using technology as a delivery system?

Methods: A longitudinal, ex post facto design was used. Two hundred and sixty-six subject records were examined. Seventy-seven individuals were lost through attrition. One hundred and eighty-nine records were used as the study sample. One hundred and seventeen individuals were

located face to face while 72 were at a distance. Independent variables include time and location, while dependent variables include course grades, grade point averages (GPAs) and the National Board of Dental Hygiene Examination (NBDHE). Three research questions were asked:

1. Were there statistically significant differences in learner performance on the National Board of Dental Hygiene Examination (NBDHE)?
2. Were there statistically significant differences in learner performance when considering GPAs?
3. Did statistically significant differences in performance exist relating to individual course grades?

T-tests were used for data analysis in answering the research questions.

Results: From a cumulative perspective, no statistically significant differences were apparent for the NBDHE and GPAs. From a cumulative perspective, similar results were found for individual courses.

Conclusion: Interactive Television (ITV), the DL system examined, was considered effective for delivering education to learners if similar performance outcomes were the evaluation criteria.

NEW PROGRAMS

33. Gingivitis – objective measurement utilizing digital imaging

*Patricia A Walters, RDH, MS; Matthew Barker, PhD;
Robert Gerlach, DDS, MPH
The Procter & Gamble Company

Purpose: This is an overview of a novel measurement instrument for assessing gingivitis with the potential to replace subjective examiner grading with objective grading. A clinical validation program was designed to quantify sources of variability and population definition pertinent to sample size determination and study design. Measurement validity in 3 critical areas was examined: natural disease history, active versus placebo and dose sensitivity. The use of a validated objective clinical measurement tool measuring gingivitis should be considered by dental hygienists when making evidence based decisions regarding product and treatment recommendations.

Significance: The Löe-Silness Gingivitis Index is the gold standard measurement for gingivitis clinical trials and the 1961 publication is the most cited paper in dentistry. Clinical trials using examiner grading are time consuming, expensive and unpredictable. Gingivitis image analysis utilizes a high resolution camera for image capture and focuses

on the facial surfaces of the 12 anterior teeth. The gingival color change is captured by assessing the red-green-blue quantification during analysis. The final data point reflects the change in color before and after intervention.

Key Features: Pictorial display of images from the natural history and active versus placebo validation exercises will demonstrate the usefulness of the objective measurement tool in research. Limitations concerning this measurement tool will be presented so the clinician can judge the usefulness of the data in subjects with gingivitis when critiquing the literature.

Evaluation: Gingivitis image analysis has been shown to correlate with the Gingival Index commonly used in research. In addition, large scale clinical testing confirms the usefulness of this measurement tool. The method is highly sensitive and the analysis has good discrimination power. The method allows for visual presentation of the data and, when used in clinical research, the cost and time is significantly reduced.

Acknowledgement: Funding of this program was provided by The Procter & Gamble Company.

34. Objective grading of tooth color change

*Mary Lontchar, RDH, MA; Patricia Walters, RDH, MS
The Procter & Gamble Company

Purpose: This is an overview of a novel tooth color measurement system that has been validated both clinically and instrumentally. The measurement system allows for more expedient testing of products that can be used in patients with intrinsically stained teeth. The system effectively measures both mild and severe stain, including fluorosis and tetracycline stain.

Significance: Application of digital imaging has been extensively reported in the literature for the measurement of tooth color. Digital imaging provides the lowest variability and is most sensitive to tooth color changes. The system conforms to an ASTM (American Society for Testing and Materials) standard.

Key Features: The images are obtained by a high-resolution digital camera and fixed lighting conditions. From each

image a Munsell calibration standard L*, a* and b* value is determined separately for each tooth and is defined as overall color change relative to white. Pictorial display of images before and after use of a whitening product demonstrates the usefulness of the objective measurement tool.

Evaluation: Digital Imaging is an objective method for assessing tooth color changes. The method allows for visual presentation of the data, research is quick and inexpensive to execute. The method has shown it is reproducible and repeatable from study to study and between research sites. The points of difference between subjective and objective grading are issues that the dental hygienist would consider when critically analyzing the literature and making evidence based decisions related to product and treatment recommendations.

Acknowledgement: Funding for this project was supported by The Procter & Gamble Company.

35. Objective grading of plaque - digital image analysis

*Lois Rigmont Barber, RDH, BSEd; Patricia Walters RDH, MS
The Procter & Gamble Company

Purpose: This is a presentation of a novel plaque measurement tool which dimensions how a 32 site partial mouth plaque grading can replace the conventional 168 site whole mouth plaque grading routinely used in dental research. The testing of products using the plaque measurement tool will enable the development of clinically meaningful technologies in a more efficient and less costly research program.

Significance: As an objective measure, digital plaque imaging analysis is used to assess plaque coverage before and after product use. A dental hygiene clinician will be able to use data generated from this objective measurement tool to make sound decisions before recommending products and determining treatment plans for their patients.

Key Features: The method involves plaque disclosure with a fluorescein dye followed by a digital image. Using UV

illumination with standardized lighting conditions, the anterior facial tooth surface images are analyzed for total pixel area of teeth and plaque coverage. Pictorial display of images before and after tooth brushing and mouth rinse use, as well as data from a large cross-sectional study showing partial mouth plaque measurement compared to whole mouth plaque scores, will demonstrate the usefulness of the objective measurement tool.

Evaluation: Digital plaque imaging is an objective method for assessing plaque coverage. The method is highly sensitive and the analysis has good discrimination power. The method allows for visual presentation of the data, and the execution of the research is both efficient and less costly. The method has shown it is ideal for repeated measures and is reproducible and repeatable from study to study and between research sites.

Acknowledgement: Funding for this project was supported by The Procter & Gamble Company.

TRANSLATIONAL RESEARCH IN ORAL CANCER (ORIGINAL RESEARCH)

36. Preclinical evaluation of genistein and biochanin a inhibition of FAK in oral squamous cell carcinoma cell lines

*Tara L Johnson, RDH, PhD

Department of Dental Hygiene, Kasiska College of Health Professions, Idaho State University

Maria B Lai; Alok Bhushan, PhD; James CK Lai, PhD

Department of Biomedical and Pharmaceutical Sciences, College of Pharmacy and Biomedical Research Institute, Idaho State University

Purpose: The focal adhesion kinase (FAK) is an intracellular tyrosine kinase associated with the regulation of cell growth, migration and survival, and has been linked to oral squamous cell carcinoma (OSCC). The purpose of the current study was to determine the effects of isoflavones on proliferation, invasion and decreases in expression of the FAK protein.

Problem statement: The survival rate for patients with OSCC remains poor, despite advances in diagnosis and treatment. OSCC usually develops in areas of the epithelium exposed to carcinogens and likely results from the accumulation of genetic alterations, which lead to aberrant

expression of many proteins involved in cell growth regulation. Molecular inhibition of 1 or several of these proteins may impede or delay the development of cancer.

Methods: We examined the effects of 2 isoflavones, namely genistein and biochanin A, on proliferation, inhibition of FAK and invasion in 2 human OSCC cell lines by MTT assay, Western blot analysis and invasion assay. The significance of differences between the control and treatment values will be determined by ANOVA followed by the post hoc Tukey test using KaleidaGraph (Synergy Software for Windows and Macintosh, Reading, PA).

Results: Preliminary results show that treatment with genistein and biochanin A induced decreases in survival of both OSCC cell lines in a dose dependent manner. Both isoflavones caused decreases in protein expression of FAK and inhibition of invasion in a dose-related way.

Conclusions: Genistein and biochanin A have both anti-proliferative and anti-invasive effects in OSCC cell lines. These findings suggest that inhibition of FAK might be a novel treatment or preventive strategy in OSCC.

CLINICAL RESEARCH/BEHAVIORAL SCIENCE (ORIGINAL RESEARCH)

37. Participation in clinical research: understanding motivation and attitudes

*Karen B Williams RDH, MS, PhD; Lynn R Friesen DDS, MS

University of Missouri-Kansas City School of Dentistry, Kansas City, MO

Purpose: Understanding subjects' relative attitudes and motivation for participating in clinical trials may assist researchers in subject recruitment and retention activities.

Problem statement: Therefore, this study explored research subject attitudes, satisfaction with participation, reason for participation in research and issues related to subjects' awareness of informed consent as a function of demographics in a population of individuals currently enrolled in a dental clinical trial at a Midwestern academic institution.

Methods: Participants were asked to complete a voluntary questionnaire to elicit their level of agreement with 40 statements. Items were measured using a 5-point Likert response scale. One hundred and sixty-seven individuals completed the questionnaire out of the 180 total participants.

Results: Subjects were predominantly female (66%). Seventy-four percent of subjects ranged in age from 30 to 59. Fifty-nine percent self-identified as white, 25% as African-American, 8% Latino and 6% other. Principal

components analysis with varimax rotation was used to explore the underlying factor structure of the 40 items. Eleven factors were identified (eigenvalues > 1.0) and explained 71% of item variance. Factors included: study satisfaction, fate, social norms, pain, purpose, negative effects, free dental care, informed consent/study knowledge, financial issues, autonomy, health worries and need for dental research. Mean subscale scores were computed for subsequent comparisons.

- Women were more likely to report they understood their consented rights ($p=.005$) than men, and they worried less about their health ($p=.024$).
- African-Americans were more likely to report that fate guided their health ($p=.0001$), as well as to report negative social norms about participating in research ($p=.005$).
- Additionally, middle aged adults (45 to 59) are less likely to participate because they needed the money compared to younger and older groups ($p=.025$).

Conclusions: These results suggest that motivation for participating in research differs among demographic groups and should be considered in the conduct of clinical research.

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L'ASSOCIATION CANADIENNE
DES HYGIÉNISTES DENTAIRES

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INDEX OF 2009

SUBJECT INDEX

Page references belong to the issue and the first page of the article.

Articles

Academic/industry relationship: Common misconceptions about bias. Sep-Oct;240
Affiliated practice dental hygiene. Sep-Oct;226
American Dental Hygienists' Association National Dental Hygiene Research Agenda. Sep-Oct;182
An update from "The Dental PBRN". Sep-Oct;195
An update from Northwest PRECEDENT. Sep-Oct;197
An update from the PEARL network and serving as a practice research coordinator for the PEARL network. Sep-Oct;195
Behavioral and integrative treatment development program. Sep-Oct;248
Building relationships from an industry perspective. Sep-Oct;231
Business of dental hygiene—A practice experience in nursing homes. Sep-Oct;224
Canadian Dental Hygienists Association: Creation and capacity building in the 21st century. Sep-Oct;183
Canadian Institutes of Health Research and its Institute of Musculoskeletal Health and Arthritis. Sep-Oct;179
Cochrane Reviews: abstracts and summaries. Jul-Aug;152
Clinician-patient communication to enhance health outcomes. Sep-Oct;204
Delivering care to infants and children. Sep-Oct;229
Dental hygienist prescribers in Alberta. Sep-Oct;225
Developing research plans and outcome measures for oral-systemic project assessments. Sep-Oct;222
Devices for detecting oral cancer. Sep-Oct;202
Exploring the government/industry interface—the NIH SBIR STR Program. Sep-Oct;241
Historical overview of models of practice based research; NIDCR DPBRN Grant Initiative. Sep-Oct;194
How can dental hygiene interface with dental practice-based research networks? Sep-Oct;198
How understanding psychiatric illness can help clinicians provide optimal oral health care. May-Jun;101
Increasing adoption of new innovations and effective practice recommendations. Sep-Oct;193
Increasing cultural competence in the dental hygiene profession. Nov-Dec;297
Inequity and disparity in oral health—Part II. Socio-economic status and deprivation: can dental hygiene diminish the impact? Mar-Apr;53
Influence of political forces on research funding. Sep-Oct;230
Lessons learned from grant writing: Establishing a track record for funding and involving community providers in implementation. Sep-Oct;243
Mobile van delivery of dental hygiene services. Sep-Oct;227
NIDCR's 2009–2013 strategic plan. Sep-Oct;178
Non surgical treatment of peri-implant pockets: An exploratory study comparing 0.2% chlorhexidine and 0.8% hyaluronic

acid. Jan-Feb;25
Periodontal disease and association with diabetes mellitus and diabetes: clinical diagnostic implications. Sep-Oct;219
Periodontitis and premature death: A longitudinal, prospective clinical trial. Sep-Oct;217
Poster presentations at NADHRC. Nov-Dec;275
Providing oral health care across cultures. Sep-Oct;204
Over the counter xerostomia remedies currently available in Canada. Mar-Apr;71
Research priorities from the behavioral and social sciences research program at the NIDCR. Sep-Oct;244
Research priorities in women's health. Sep-Oct;245
Role of health literacy in reducing health disparities. Sep-Oct;205
Saliva-based prognostic test for dental caries susceptibility. Sep-Oct;201
Societal conditions driving the need for advocacy education in dental hygiene. Nov-Dec;267
Stem cells and dentistry. Sep-Oct;200
Strategic planning and research priorities in private industry. Sep-Oct;232
Tobacco cessation counseling among dental hygienists in Quebec. Jan-Feb;9
Tobacco control research priorities at the National Cancer Institute. Sep-Oct;246
Translating evidence of oral-systemic relationships into models of inter-professional collaboration. Sep-Oct;220
Update on *Healthy People 2020*. Sep-Oct;180
Use of removable partial dentures and progression of periodontal disease. May-Jun;113
Utilizing the oral innate immune system to diagnose and monitor periodontal diseases. Jul-Aug;136

Editorials

Uniforms and microbial contamination. May-Jun;99
North American Dental Hygiene Research Conference proceedings. Sep-Oct;176
It's all about curiosity and collaboration. Nov-Dec;264
Emerging dental hygienists' communication: Part 1. Nov-Dec;265

Messages

A new era of responsibility; Mar-Apr;47
A spring in your professional step; Mar-Apr;43
Bienvenue en l'an 2009, avec tout ce qu'il offre. Jan-Feb;3
Conquering self doubts. Sep-Oct;175
Des parcours reconnus. Sep-Oct;171
Ends. Nov-Dec;263
Great journeys recognized. Sep-Oct;171
Influences of change. Nov-Dec;259
L'influence du changement. Nov-Dec;259
Les buts. Nov-Dec;263
La réussite. Jul-Aug;131
On achievements. Jul-Aug;131
On participation. May-Jun;91
Que de petites choses! Jan-Feb;7
Que trouve-t-on dans un nom? Jul-Aug;135
Rites de passage et progress. May-Jun;95
Rites of passage and progress. May-Jun;95
Series of small things. Jan-Feb;7
Une nouvelle ère de responsabilité. Mar-Apr;47
Une tournée d'engagement. May-Jun;91
Une vigueur printanière dans votre démarche

professionnelle. Mar-Apr;43
Vaincre ses propres doutes. Sep-Oct;175
Welcome to 2009 and all it has to offer. Jan-Feb;3
What's in a name? Jul-Aug;135

Letters to the Editor

Access to care: Be the change you want to see. May-Jun;97
An "independent" practice. May-Jun;98
Delivering oral health care in Venezuela: KIA and its mission. Mar-Apr;49
14 February: Gift from the heart. Mar-Apr;50
Healthy Living Program in El Porvenir, Honduras. Nov-Dec;266
What in the world is happening to dental hygiene education in Canada? Mar-Apr;49

Independent Practice column

How are we doing? Where do we go from here? Nov-Dec;319
Importance of good planning and design for your dental hygiene office. Sep-Oct;234
Mobile dental hygiene practice: What are the specific challenges? May-Jun;107
The premise lease: A long term commitment. Mar-Apr;60
Veterans Affairs Canada: an update. Jul-Aug;146
Why is market research important to dental hygiene practice? Jan-Feb;16

Library column

Additions to our library. Sep-Oct;251
Elder abuse and neglect. Nov-Dec;323
E-mail netiquette. Mar-Apr;63
Interdisciplinary health care. Jul-Aug;145
Knowledge transfer. May-Jun;122
Taking action. Jan-Feb;35

News

Activity and Canadians. Jan-Feb;33
CDHA Board of Directors: 2009–2010. Nov-Dec;287
CDHA collaborates on National Competencies for your profession. Sep-Oct;215
CDHA creates vision and leadership in DH research. Sep-Oct;215
CDHA Greetings Speech at CAPHD AGM March 2009. May-Jun;118
CDHA honours Mickey Wener. Sep-Oct;209
CDHA to provide dental hygiene services in Sioux Lookout Zone. Nov-Dec;288
Celebrating our heroes... Nov-Dec;288
Congratulations Dr. Susan A. Ziebarth! Sep-Oct;209
Despite serious health risks, Canadians continue to smoke. Nov-Dec;288
Doctoral research award funding opportunity. Sep-Oct;216
Electronic health records. Jul-Aug;150
Health Canada advisory. Jan-Feb;32
Highlights of CDHA Board Meeting. Sep-Oct;211
Highlights of the Board of Directors meeting, 26–28 February 2009. May-Jun;118
Improving cost effectiveness and program efficiencies in FNIB, NIHB program. Nov-Dec;290
In search of a HERO ... Sep-Oct;210
Independent Practice. Sep-Oct;211
Infection Prevention and Control Measures for health care workers in long term care facilities. Nov-Dec;289
Job market and employment survey. Sep-Oct;216
Keep off dieting to avoid flu. Jan-Feb;32

Looking ahead to National Dental Hygienists Week. Jan-Feb;32
 National health products in Canada. Jan-Feb;33
 National licence for Cochrane Library. Jul-Aug;150
 New statement on antibiotics after joint replacement. Nov-Dec;288
 North American Dental Hygiene Research Conference. Sep-Oct;210
 Prestigious awards and grants support DH research in Canada. Sep-Oct;214
 Recognizing excellence. Mar-Apr;66
 Research Corner. Nov-Dec;294
 Thank you, Niagara College, for CFDHRE donation. May-Jun;119
Unravelling the literature: An unprecedented success. Jan-Feb;32
 What's making headlines in oral health? Sep-Oct;216
 Winner of the NADHRC awards. Sep-Oct;210

Probing the Net column

Dispelling waiting room woes. Sep-Oct;252
 Health and safety alerts. Mar-Apr;84
 Machine translation. Jul-Aug;151
 Online continuing education for dental hygienists. May-Jun;125
 Portal power. Jan-Feb;36
 Social responsibility: perspectives of professional organizations. Nov-Dec;324

CDHA information

April is Oral Health Month. Jan-Feb;38
 19-25 April 2009 is National Dental Hygienists Week™. Mar-Apr;86
 Bon de commande de ressources éducatives. Mar-Apr;82, May-Jun;112
 CDHA AGM Proxy and Notice. Sep-Oct;207
 CDHA Community Calendar. Sep-Oct;254, Nov-Dec;326
 CDHA Dental Hygiene Recognition Program. May-Jun;123, Sep-Oct;249, Nov-Dec;321
 CDHA Dental Hygiene Events. Sep-Oct;254
 CDHA Membership. Jul-Aug;148, Sep-Oct;212
 CDHA Group Retirement Services. Jan-Feb;31
 CDHA Webinar watch. Sep-Oct;214
 CFDHRE: A new era for dental hygiene research in Canada. Jan-Feb;17
 CFDHRE: Foundation letter with donation insert. Jan-Feb;20
 CFDHRE: Together, let's reach higher/Call for proposals. Jan-Feb;21, Nov-Dec;289
 2009 Dental Hygiene Programs Recognition Award. Mar-Apr;62, May-Jun;121
 2010 Dental Hygiene Programs Recognition Award. Jul-Aug;147, Sep-Oct;236
 Des services encore plus accessible et varies. Mar-Apr;70
 Educational resources order form. Mar-Apr;81, May-June;111
 Educational resources. Mar-Apr;80, May-June;110, Sep-Oct;238
 Great-West Life (TSFA). Mar-Apr;61
 Guidelines for authors notice. Mar-Apr;86
 Independent Practice workshop. Jul-Aug;144; Sep-Oct;211
 Instructions aux auteurs. Mar-Apr;78, Jul-Aug;143
 La santé buccodentaire Mar-Apr;52
 More choice. Better access. Mar-Apr;69
 North American Research Conference. Jan-Feb;15, May-Jun;100
 Oral health and brushing, flossing and rinsing. Mar-Apr;51
 Professional development opportunities. Sep-Oct;237, Nov-Dec;325

Programme de reconnaissance en hygiène dentaire de l'ACHD. May-Jun;124
 Smile! The tooth and nothing but the tooth. Mar-Apr;83
 Surveillez les webinaires. Sep-Oct;214, Nov-Dec;296
 TD Assurance Meloche Monnex. Nov-Dec;318
 Thank you, Crest Oral-B. May-Jun;126
 Thank you to reviewers of 2008. Jan-Feb;3
 Webinar Watch: Cochrane. Nov-Dec;315

AUTHOR INDEX

Page references belong to the issue and the first page of the article.

Aboodi GM. *See* Glogauer.
 Aleksejūnienė J. *See* Gorovenko MR.
 Asadoorian J. Mar-Apr;53
 Atkinson J. Sep-Oct;245
 Aubin JE. Sep-Oct;179
 Backinger CL. Sep-Oct;246
 Barbeau J. May-Jun;99
 Blatz J. Nov-Dec;259
 Byrd TO. Sep-Oct;229
 Carvalho R. *See* de Araújo Nobre M.
 Cathcart G. Mar-Apr;49
 Charbonneau CJ. Nov-Dec;297
 Clark DB. May-Jun;101
 Clark DC. *See* Gorovenko MR.
 Clarkson JC. Sep-Oct;193
 Clayton P. Sep-Oct;227
 Craig BJ. *See* Charbonneau
 Cobban SJ. *See* Edgington
 Côté J. *See* Tremblay
 Craig RG. Sep-Oct;194
 Cugini M. Sep-Oct;240
 de Araújo Nobre M. Jan-Feb;25
 Denny PC. Sep-Oct;201
 DeNucci DJ. Sep-Oct;194
 Derome D. *See* Tremblay
 Donnelly LR. *See* Charbonneau
 Edgington EM. Nov-Dec;267
 Etzler K. Sep-Oct;241
 Fedora W. Jan-Feb;3, Mar-Apr;43, May-Jun;91, Jul-Aug;131, Sep-Oct;171
 Forrest JL. Sep-Oct;176, 182
 Fuenzalida M. *See* Munoz
 Garcia I. Sep-Oct;178
 Genco RJ. Sep-Oct;219, 230
 Glogauer M. Jul-Aug;136
 Gorovenko MR. Mar-Apr;71
 Grossman D. Sep-Oct;246
 Gurenlian JR. Sep-Oct;202
 Heckler AJ. *See* Glogauer.
 Hein C. Sep-Oct;220
 Horowitz AM. Sep-Oct;205
 Keenan L. Sep-Oct;204
 Kittle D. Mar-Apr;49
 Lavigne SE. Sep-Oct;183
 Lawrence D. Sep-Oct;246
 Mackie S. Sep-Oct;225
 Malo P. *See* de Araújo Nobre M.
 Malvitz DM. Sep-Oct;180
 Mao JJ. Sep-Oct;200
 Munoz N. Nov-Dec;266
 Nanchoff-Glatt M. Sep-Oct;204
 Naughton DK. Sep-Oct;224
 Neufeld MJ. Nov-Dec;297
 O'Loughlin J. *See* Tremblay
 Panico M. Sep-Oct;226
 Pimlott JFL. *See* Edgington.
 Raposa KA. Sep-Oct;232
 Riddle M. Sep-Oct;244
 Rothen M. Sep-Oct;197
 Saunderson S. May-Jun;98

Shafer R. Nov-Dec;265
 Söder B. Sep-Oct;217
 Spolarich AE. Sep-Oct;176, 198
 Steacy D. Mar-Apr;50
 Sunell S. Nov-Dec;264
 Tenenbaum H. *See* Glogauer.
 Tremblay M. Jan-Feb;9
 Umar S. May-Jun;113
 Walsh MM. Sep-Oct;244
 Wilder R. *See* Sunell
 Williams KB. Sep-Oct;222
 Winston L. Sep-Oct;231
 Yakiwchuk C-A. May-Jun;97
 Ziebarth S. Jan-Feb;7, Mar-Apr;47, May-Jun;95, Jul-Aug;135, Sep-Oct;175, Nov-Dec;263

KEYWORD INDEX

Page references belong to the issue and the first page of the article.

Care

Care. Mar-Apr;53
 Dental care. Nov-Dec;297
 Periodontal disease. May-Jun;113
 Periodontitis. Jul-Aug;136
 Psychiatric illness. May-Jun;101
 Psychotropic medications. May-Jun;101
 Smoking cessation. Jan-Feb;9
 Tobacco cessation. Jan-Feb;9
 Xerostomia. Mar-Apr;71

Dental

Dental implant. Jan-Feb;25
 Dental prosthesis. May-Jun;113
 Dental. Jan-Feb;25
 Dentures. May-Jun;113
 Dental hygiene. Mar-Apr;53, Nov-Dec;297
 Dental hygienists. Jan-Feb;9, Nov-Dec;267

Oral

Oral health complications. May-Jun;101
 Oral health. Mar-Apr;53, Nov-Dec;297
 Oral rinse assay. Jul-Aug;136

Professional development

Consumer advocacy. Nov-Dec;267
 Dental hygiene education. Nov-Dec;267
 Education. Nov-Dec;297
 Professional education. Nov-Dec;267
 Public policy. Nov-Dec;297

Social

Counselling. Jan-Feb;9
 Cultural competence. Nov-Dec;297
 Disparities. Mar-Apr;53
 Ethnic groups. Nov-Dec
 Health care disparities. Nov-Dec;297
 Inequities. Mar-Apr;53

Treatments

Chlorhexidine. Jan-Feb;25
 Drug interactions. May-Jun;101
 Dry mouth palliation. Mar-Apr;71
 Hyaluronic acid. Jan-Feb;25
 Infection control. Jan-Feb;25
 Inflammation. Jul-Aug;136
 Innate immunity. Jul-Aug;136
 Irrigation. Jan-Feb;25
 Neutrophils. Jul-Aug;136
 Over the counter xerostomia remedies. Mar-Apr;71
 Removable partial dentures. May-Jun;113
 Saliva stimulants. Mar-Apr;71

Position for commercial advertisement

How are we doing? Where do we go from here?

CDHA's Independent Practice Advisor, Ann E. Wright

Year end 2009 presents an opportunity to reflect on the status of independent dental hygiene practice in Canada. While independent practice (IP) has been established in British Columbia and Saskatchewan for over a decade, it is a relatively recent event elsewhere in Canada.

Numbers and location

There are currently over two hundred independent practices in Canada. Fifty per cent of the practices are located in Ontario, followed by British Columbia and Alberta. There are a handful in both Saskatchewan and Manitoba, one in Quebec; and our colleagues in New Brunswick and Nova Scotia, having just received self initiation, are anxious to get up and running. Independent practitioners, while small in numbers, are a vocal and an energetic group. The following is a sample of data and observations collected at the CDHA office over the past year.

Type of practice

Forty per cent of independent practitioners operate mobile practices and 60 per cent practise in a fixed location. Some dental hygienists combine the two, taking mobile equipment out to the homebound or long term care homes, and then working out of a fixed location.

Where do independent practitioners practise?

Approximately 40 per cent independent practitioners practise in remote or rural areas bringing dental hygiene care to those who would not normally have access to regular, preventive oral health care. Dental hygienists collaborate with other health professionals including physicians, nurses, denturists, dieticians, occupational therapists, speech language therapists and massage therapists to name a few.

Why does the public visit IPs?

Dental hygiene practices are *different*. They offer an appealing alternative for oral care services. Dental hygiene practices offer increased flexibility for the public in choice, location, and hours of operation. Dental hygiene practitioners see clients who might not seek any treatment at all because they are dentaphobic or uneasy about visiting a traditional dentist's office. Dental hygiene practices are less stressful. Clients comment on the calm, relaxed environment, without the sounds or smells of a dental high speed handpiece. IP dental hygienists report a significant increase in the number of senior clients that they treat.

Are IPs attracting clients? How are they doing financially?

Independent practitioners are working extremely hard to attract clients, and to meet their operating expenses. This last year has been particularly difficult as the nation

works through a struggling economy and job loss not seen in decades. Generally IPs are holding their own financially. If a business can break even in the first year or so of business, then it can be considered viable. By this standard, most of the IPs in Canada are successful. I recently spoke to an IP dental hygienist in southern Ontario who had called to update me on her practice. She was extremely enthusiastic about her recent promotional activities and an article that a local paper had written on her practice. I asked her how she was doing financially. Her reply was that she was "doing fantastic." I asked her to explain what that meant.

"Well," she said, "I have been open for 9 months. I see an average of 2-4 clients per day, and recently have been averaging close to 4 per day. I have not yet taken a salary, but am finally breaking even with my expenses."

This practitioner is typical of dental hygienists who own IPs; confident, excited and hard working, but certainly not earning the salary they might earn in a traditional dental practice.

Independent practitioners have formed Private Practice Societies in Alberta and Ontario to share common interests and problems and to work on solutions. Independent practitioners in Ontario spearheaded last February's "Gift from the Heart" program where over twenty offices offered a variety of services and products to the public on Valentine's Day. Some provided mouth guards, other oral cancer screening and/or dental hygiene examinations. Independent practitioners in Alberta sponsored a booth at the College of Registered Dental Hygienists of Alberta (CRDHA) annual educational conference to promote independent practice to all members. A similar booth was sponsored by independent practitioners of Ontario at the CDHA-ODHS workshop in October. On a more informal basis, independent practitioners are volunteering for health fairs in their community, offering mouth guard clinics in local arenas, visiting seniors, elementary schools and day care centres to provide education and information for the public.

Independent practitioners are a special breed. They are dental hygiene trailblazers and unstoppable in their determination to achieve the best possible oral health care for their clients. The following is a selection of what IP dental hygienists have to say:

- "I am seeing clients who do not commonly access care through a dental office."
- "Hundreds of my clients would have no care at all if I did not go to see them in their home or long term care facility."
- "I am now providing on-site dental hygiene care at residential facilities that previously offered no services."
- "I have seen many clients with no dental coverage waiting years to have their teeth cleaned."
- "It upsets me to see the rampant decay and untreated dental disease in residents of LTC facilities"

While the scope of practice varies across the country, dental hygienists in Alberta have the broadest and clearly the most enviable practice environment. In addition to debridement, root planning, Alberta dental hygienists provide curettage, deliver local anesthetics, can prescribe some antibiotics, and take their own radiographs.

Alberta was also the first province to pilot test the electronic submission of oral care claims to an insurance

company. Thanks to the efforts of the CRDHA and their negotiation with Alberta Social Services, Alberta Quikcard was able to receive and adjudicate dental hygiene claims for the very first time. This project could not have been accomplished without the six willing IP dental hygienists who offered to test the system, and CDHA would like to extend a special thank you to these individuals.

Where do we go from here? IP dental hygiene practice is new. The public is still not fully aware that dental hygienists can practise outside of a dentist's office. Furthermore, it is probably safe to surmise that many Canadians will have some reluctance to jump ship from their dentist's office and move to a new oral care provider. CDHA promises to promote IP by continuing to write press releases and gov-

ernment briefs, monitor media coverage of dental hygiene events, and lobby for increased access to dental hygiene. In September, CDHA was pleased to receive a contract with Health Canada to provide dental hygiene services to First Nations reserves in the Sioux Lookout Zone in Ontario. This is the first time that Health Canada has entered into a contract with a dental hygiene organization. CDHA hopes to build on this success and will continue to apply for more of these contracts in the future.

One message rings loud and clear from IP dental hygienists. In last year's CDHA survey, not one dental hygienist regretted starting his or her own practice. With all the difficulties they have faced, that statement is a powerful testimonial. ©CDHA

Message de la directrice générale, Les buts ...suite 263

hygiénistes dentaires qu'ils estiment ne pas satisfaire aux normes de pratique. L'ACHD collabore aussi avec les associations provinciales d'hygiène dentaire dans leurs démarches auprès du gouvernement pour obtenir l'autorégulation.

Le développement de la recherche pour comprendre ce qui se passe dans la communauté de l'hygiène dentaire est essentiel pour son avancement et sa protection. Nous avons mené récemment une étude des effectifs de façon à comparer ceux des diverses régions géographiques entre elles. L'ACHD a aussi mené une étude sur les entreprises privées des hygiénistes dentaires.

Les liens que nous entretenons entre nous ouvrent des avenues pour élaborer des solutions créatrices ainsi que procurer et

recevoir le soutien professionnel. La complexité des préoccupations requiert des efforts sur plusieurs fronts. « Merci » à celles qui ont pris le temps d'écrire ou de téléphoner à leur association provinciale et à l'ACHD pour les informer de leurs inquiétudes. L'immense remaniement de notre site Internet a ajouté de nouveaux outils informatiques qui vous permettront de communiquer en toute sécurité avec les autres hygiénistes dentaires qui doivent affronter des problèmes semblables aux vôtres et qui souhaitent aborder ces questions.

Il nous incombe d'utiliser nos énergies en symbiose et avec détermination pour atteindre le genre d'environnement professionnel qui permettra aux hygiénistes dentaires de servir leur clientèle le mieux possible. Faisons ensemble des vagues positives. Nos liens vibrent d'énergie. ©CDHA

Stay Connected: on the journal's front cover in 2010

Dental hygiene educators across Canada

Each of the six outer front covers of the 2010 issues of the *Canadian Journal of Dental Hygiene*, volume 44, will feature Canadian dental hygiene educators to honour their commitment to the dental hygiene profession. The editorial office of the *Canadian Journal of Dental Hygiene* invites dental hygiene educators to submit one picture of themselves in an educational environment and a brief write-up.

Criteria:

- The dental hygiene educator or a group of educators must be members of CDHA.
- Contributors identify themselves and their area of work in a brief summary, limited to 50 words. E-mail address, website or link to the webpage if there is one, are not included in the word count.
- The educator permits use of the picture and text submitted, if selected, to be published in the journal. CDHA is the copyright holder.
- If any other educators or the faculty are featured as subjects in the picture, then signed permissions from each accompany the submission.
- Your entry should reach the mailing address by Friday, 18 December 2009. None of the entries will be returned.
- Pictures sent in electronic formats (.jpg, .tif, .eps, .pdf) must be of the highest resolution (2048 x 1536).
- One picture per entry.

The selected six entries will be announced in CDHA's e-mail broadcast to members in February 2010.

Your entry is welcome in any of the following formats:

1. Hardcopy of picture and text, accompanied by hardcopy signed permissions.
2. Electronic version of picture in high resolution (minimum 2048 pixels high x 1536 pixels wide) and scanned signed permissions on a CD.
3. E-mail picture, write-up, and signed permissions as e-mail attachments to journal@cdha.ca
4. If you have further queries, please call 1-800-267-5235 x135

For #1 and 2, please mail your entry to:

Ms. Chitra Arcot, Managing Editor
Canadian Journal of Dental Hygiene
Canadian Dental Hygienists Association
96 Centrepointhe Drive, Ottawa, ON K2G 6B1



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





CDHA Dental Hygiene Recognition Program

CDHA is pleased to announce the 2009 Dental Hygiene Recognition Program. This program, made possible through the contributions of CDHA's Corporate Partners, is designed to recognize distinctive accomplishments of CDHA members, including both practising and student dental hygienists. Entry details are available on the CDHA members' web site, in the "Networking and Recognition" section.

Prize Categories

CDHA dental hygiene baccalaureate student prize in participation with Crest Oral-B

One \$1,500 prize to be awarded to a dental hygiene student for contributing to the advancement of the profession in the context of educational and volunteer activities, and to be used towards education expenses.



CDHA dental hygiene diploma student prize in participation with Crest Oral-B

One \$1,000 prize to be awarded to a dental hygiene student for contributing to the advancement of the profession in the context of educational and volunteer activities, and to be used towards education expenses.



CDHA oral health promotion prize in participation with Crest Oral-B

These three prizes* are awarded for the creative promotion of dental hygiene, including community impact, education, and innovative partnerships and include: Individual prize of \$1,000; Clinic Team prize of \$2,000; Dental Hygiene Schools prize of \$2,000. * Half of each prize will be shared with the local dental hygiene society.

CDHA leadership prize in participation with Dentsply

One \$2,500 prize to be awarded in recognition of a significant contribution to the local, academic or professional dental hygiene community through involvement and leadership.

For better dentistry



CDHA achievement prize in participation with Sunstar G·U·M

One \$2,000 prize to be awarded to a student enrolled in the final year of a dental hygiene program who has overcome a major personal challenge during his/her dental hygiene education.

SUNSTAR



CDHA global health initiative prize in participation with Sunstar G·U·M

One \$3,000 prize in recognition of a registered dental hygienist who has committed to volunteering as part of an initiative to provide oral health related services to persons in a disadvantaged community or country.

CDHA visionary prize in participation with TD Insurance Meloche Monnex

One \$2,000 prize awarded to a student in a masters or doctoral program in dental hygiene in recognition of a vision for advancing the dental hygiene profession.



Get involved and you could win!

Application deadline is **4 December 2009**. CDHA will make a public announcement of the prize winners in April 2010 during National Oral Health Month.

L'ACHD est heureuse de présenter le programme de reconnaissance en hygiène dentaire pour l'année 2009. Ce programme, rendu possible grâce aux dons des entreprises partenaires de l'ACHD, est conçu pour reconnaître les réalisations distinctives des hygiénistes dentaires et des étudiantes et étudiants en hygiène dentaire membres de l'ACHD. Les détails concernant les procédures d'inscription sont affichés sur le site Web réservé aux membres de l'ACHD, à la section "Networking and Recognition". La date butoir pour soumettre les demandes d'inscription aux différents prix est le **4 décembre 2009**.

Catégories de prix

Prix de l'ACHD destiné aux étudiantes et étudiants au baccalauréat en hygiène dentaire, décerné avec la participation de Crest Oral-B

Un prix de 1 500 \$ offert à une étudiante ou un étudiant en hygiène dentaire au niveau du baccalauréat pour sa contribution à l'avancement de la profession dans le cadre d'activités éducatives et d'activités de bénévolat.



Prix de l'ACHD destiné aux étudiantes et étudiants au diplôme en hygiène dentaire, décerné avec la participation de Crest Oral-B

Un prix de 1 000 \$ offert à un étudiant ou une étudiante, inscrit(e) dans un programme en hygiène dentaire menant à un diplôme, pour sa contribution à l'avancement de la profession dans le cadre d'activités éducatives et d'activités de bénévolat.



Prix de l'ACHD pour la promotion de la santé buccodentaire destiné à un programme d'hygiène dentaire, décerné avec la participation de Crest Oral-B

Les trois prix* suivants sont offerts pour la promotion créative de la profession de l'hygiène dentaire. Les inscriptions seront jugées selon les critères suivants : créativité, planification, recrutement de bénévoles, éléments éducatifs, impressions et impact sur la collectivité, ainsi que sur la dimension innovatrice des partenariats : Prix individuel de 1 000 \$, Prix d'équipe clinique de 2 000 \$, Prix d'école d'hygiène dentaire de 2 000 \$. * La moitié de chaque prix sera partagée avec le chapitre local de l'association d'hygiène dentaire des gagnantes et gagnants.

Pour une dentisterie de qualité



Prix de l'ACHD pour le leadership, décerné avec la participation de Dentsply

Un prix de 2 500 \$ offert à un étudiant ou une étudiante, inscrit(e) dans un programme en hygiène dentaire, en reconnaissance d'une contribution significative à la communauté locale académique ou professionnelle de l'hygiène dentaire par son engagement et son leadership.

Prix de l'ACHD pour une réalisation, décerné avec la participation de Sunstar G-U-M

Un prix de 2 000 \$ offert à un étudiant ou une étudiante, inscrit(e) en dernière année d'un programme en hygiène dentaire, qui a surmonté un défi personnel important durant sa formation en hygiène dentaire.



Prix de l'ACHD pour un programme de santé mondial, décerné avec la participation de Sunstar G-U-M

Un prix de 3 000 \$ offert à un ou une hygiéniste dentaire autorisé(e) qui s'est engagé(e) comme bénévole dans un programme visant à offrir des services liés à la santé buccodentaire à des personnes faisant partie d'une communauté ou d'un pays défavorisé.



Prix de l'ACHD pour l'esprit visionnaire destiné à un étudiant ou une étudiante de 2^e ou 3^e cycle dans un programme relatif à l'hygiène dentaire, décerné avec la participation de TD Assurance Meloche Monnex

Un prix de 2 000 \$ offert à un étudiant ou une étudiante, actuellement inscrit(e) dans un programme de maîtrise ou de doctorat lié à l'hygiène dentaire, en reconnaissance de sa vision de l'avenir pour l'avancement de la profession de l'hygiène dentaire.

Elder abuse and neglect: role of dental hygienists

CDHA staff

The elderly comprise the nation's fastest growing population, and by 2015 seniors aged 65 years and over will outnumber children in Canada. By 2031 there will be 8.9 to 9.4 million seniors between the ages of 65 and 85 years.¹ While people of all ages are at risk for family violence, the elderly are especially vulnerable. It is believed that this type of violence is not only grossly under reported but is as common as child abuse.

Elder abuse can be defined as "mistreatment of older people by those in a position of trust, power or responsibility for their care."² A telephone survey of 2000 randomly selected Canadian seniors, stratified by geographic region, estimated the prevalence of elder abuse at 4 per cent.³ Estimates in other jurisdictions have ranged as high as 10 per cent.⁴ The causes of elder abuse include many of the same factors that contribute to family violence in general; they are numerous and complex. Older persons who are perceived or perceive themselves as helpless are often targets of abuse. There may also be a long term pattern of violence where the abuser becomes the abused. The physical and psychological consequences of all forms of maltreatment can be so damaging and irreversible that the older person may long for the release of death.⁵

Dental hygienists can play an important role in the recognition and reporting of elder abuse. It is common for clients to visit the same dental hygienist for a one-hour appointment every 3 to 9 months, and thus to develop rapport and professional relationship based on trust. One American study found that due to the increased rate of periodontal disease and need for continuing care in this population, the average elderly person makes two dental visits per year.⁶ In Canada, 46 per cent of seniors taking part in a 2003 survey reported regular dental visits. Following changes in health care legislation, increasing numbers of dental hygienists across Canada are now able to provide mobile dental hygiene services to senior clients in their homes and retirement living centres. Dental hygienists are favourably situated to recognize and report elder abuse and neglect, and to provide resources to victims.

Two-thirds of the injuries sustained in abuse of older adults can be easily found during a routine oral examination with over half of these injuries occurring in the head and neck region.⁷ Dental hygienists should be alert to suspicious injuries of clients' head areas along with bruises in different stages of healing. In a national survey of Canadian dental offices, the most commonly reported signs of physical abuse were bruises and welts, broken dental prostheses, fractures and avulsed teeth, and abrasions and lacerations. The types of neglect most often observed included poor personal hygiene and failure to provide adequate dental care.⁸ Dental hygienists have a professional responsibility to question how injuries and scars came about, and to be attentive to non verbal as well as verbal cues.

In Canada, there are a number of laws related to abuse and neglect. According to the Canadian Network for the Prevention of Elder Abuse, such legislation includes family violence statutes, criminal law, and adult protection and guardianship laws. How effective are Canada's laws? There are many attitudinal barriers within the justice system that can discourage victims' access; however where adequate supports are in place, and through education and advocacy many of these barriers can be reduced.⁹

Dental hygienists are ethically and legally obligated to report suspected cases of elder abuse and to advocate for their clients. A report¹⁰ published in the *Journal of Dental Hygiene* assessed the likelihood of dental hygienists reporting abuse before and after a training program. Prior to training, only 40 per cent definitely knew that they would report abuse and only 5 per cent stated that they knew how to complete a report. After training, all stated that they would report the abuse and 96 per cent indicated that they knew how to complete a report.¹⁰ This study points out that many professionals are uncomfortable talking about these problems, and that they may not know how to document and act on their suspicions.

In another study, 12 per cent of dental hygienists who suspected elder abuse reported taking no action to aid their clients; however three quarters of the dental hygienists surveyed stated an interest in professional development in this area.¹¹ This strongly suggests that dental hygienists would benefit from more education on the signs, symptoms and reporting mechanisms of elder abuse. Dental hygienists have a responsibility to promote and support the rights and well being of their clients.

You can find up to date facts on elder abuse and neglect in Canada on the website of the Canadian Network for the Prevention of Elder Abuse at <http://www.cnpea.ca>

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Social responsibility: perspectives of professional groups

CDHA staff

Initial attributes of social responsibility were professionally introverted, meant doing good work for clients, and avoidance of questionable practices that would reflect badly upon the profession.¹ Perspectives and awareness of general human well being and impacts of each profession on the society began to develop and grow from the late 1960s. "No group can survive if it simply pursues its own interests without considering the consequences of its actions on society."²

Having goals linked to social responsibility is not enough; the social actions of organizations should be administered with transparency and integrity. Project management is crucial to achieve these social goals.

<http://www.pmi.org/>

The importance that Project Management Institute (PMI) places on professional and social responsibility is reflected in the fact that nearly 10 per cent of the questions on the Project Management Professional examination cover this domain. The four areas include:

1. Ensure individual integrity: Legal, ethical and social
2. Contribute to project management knowledge base: Transfer of knowledge, research
3. Enhance personal professional competence: Training, personal assessment
4. Promote interaction among stakeholders: Team and interpersonal techniques

Advocacy organizations

<http://www.iisd.org/>

International Institute for Sustainable Development (IISD) has committed itself to helping other organizations get involved, and become aware of the implications of the work in developing management standards on corporate social responsibility (CSR). IISD has engaged in a partnership with leading NGOs from around the world.

- The International Institute for Environment and Development, UK
- World Conservation Union, Switzerland
- Development Alternatives, India
- Recursos e Investigación para el Desarrollo Sustentable, Chile
- African Institute of Corporate Citizenship, South Africa.

http://www.saltwater.org/our_story/beliefs.htm

The Saltwater Institute advocates five social responsibility values: (i) family and community responsibility, (ii) respect and appreciation for the natural world, (iii) service and stewardship, (iv) the necessity for work and productivity, and (v) an intentional commitment to goodness.

Professional organizations

<http://www.sgr.org.uk/>

Scientists for Global Responsibility is a network of scientists, architects, engineers and technologists. They opt for openness, accountability, peace, social justice and environ-

mental sustainability.

<http://www.psr.org/>

Physicians for Social Responsibility is the medical and public health voice working to prevent the use or spread of nuclear weapons, and to slow, stop and reverse global warming and the toxic degradation of the environment.

<http://www.jdentaled.org/cgi/reprint/71/12/1583>

How dentists account for social responsibility: economic imperatives and professional obligations.

This published article co authored by Shafiq Dharamsi, PhD, explores how dentists explain the concept of social responsibility and its relationship to issues affecting access to oral health care by vulnerable segments of the population. Four main themes—economics, professionalism, individual choice, and politics—influenced the sense of social responsibility in dentistry.

Corporate social responsibility

A survey by PricewaterhouseCoopers of 140 chief executives of US based multinational companies found that 85 per cent of them believe that sustainable development will be even more important to their business model in five years than it is today.

<http://www.gapinc.com/socialresponsibility/>

How does the retail business include a social aspect in a highly profit driven world? To the clothing retailer GAP, social responsibility means everything from ensuring that workers are treated fairly to addressing the company's environmental impact.

<http://www.cbsr.ca/>

Canadian Business for Social Responsibility (CBSR) is the Canadian representative in a worldwide network committed to CSR. This non profit, member led organization strongly believes that corporate responsibility and business success go hand in hand. They support their member companies on their CSR agendas, and lead national debates on CSR.

<http://www.hbc.com/hbc/>

The Hudson Bay Company's CSR agenda is to foster and enhance sustainable business practices throughout their organization, particularly in the areas of the environment, associate wellness, community investment, and ethical sourcing on the premise that every one of us has a role to play in creating the kind of world we want to live in and pass on to our children.

http://forgood.yahoo.com/social_responsibility/

Yahoo! The company's simple dictum is to share their success with the communities they live and work in.

Educational institutions

<http://www.whartonsocialresponsibility.org/>

The Wharton School launched Nonprofit Board Leadership Program (NPBLP) in the spring of 2005 with the goal of creating an experiential learning environment for students that would also support local non profits in the Philadelphia area. Together, they envision to help each other succeed and achieve a rich understanding of the growing intersection between business and non profit activities. Students pursue professional and personal interests in social impact fields while earning their MBA. ©CDHA

Sources

1. SG Smith. *Accounting Historians Journal*. June 2007.
2. DF Linowes: US Committee on Social Measurement, 1977.

Professional Development Opportunities



© iStockphoto.com/Lise Gagné

Featured Courses

A Healthy Workplace

The *A Healthy Workplace* course provides a valuable tool for developing or reinforcing occupational health and safety standards so that work environments continuously improve for dental hygienists.

Self Initiation for Dental Hygienists in Nova Scotia

Successful completion of this course will allow dental hygienists to apply to the College of Dental Hygienists of Nova Scotia for approval to self initiate the authorized acts as set out in the Act and the Regulations. Aussi offert en Français

Knowledge of Dental Practice in Nova Scotia: Jurisprudence

This course is for dental hygienists who are required to complete a jurisprudence course to be eligible to apply to the College of Dental Hygienists of Nova Scotia to be licensed. It is also for those who have successfully completed CDHA's Self Initiation for Dental Hygienists online course and require the Nova Scotia version of Section 7 Jurisprudence. Aussi offert en Français

Self Initiation for Dental Hygienists

Successful completion of this course will allow dental hygienists from Stream Two to meet the requirement and from Stream Three to meet one of the requirements for eligibility to apply for approval to self initiate their authorized acts according to the CDHO Standard of Practice for Self Initiation. Aussi offert en Français

Clinical Tobacco Intervention

This online course has been developed by the BC Cancer Agency to meet the requirements of a variety of health professionals. The course will enable you, the practitioner, to answer clients' questions about tobacco use with evidence-based recommendations.

Work and Personal Life Balance

Are you feeling that life is just too hectic and unmanageable? This engaging course explores stress and work and life imbalance, helping you develop coping strategies and a personal plan of action to deal with the stress in your life.

With fall and winter fast approaching, CDHA offers you the perfect solution to combat the end-of-summer doldrums. Our online courses will allow you to expand your knowledge base and stay up-to-date on new developments in the comfort of your own home.

Obtain a certificate of course completion to satisfy provincial dental hygiene regulatory professional development requirements. Remember, it is your professional responsibility to be a life long learner. You can keep track of the professional development initiatives you have completed or are in the process of completing with the Professional Development Manager at http://www.cdha.ca/members/content/continuing_education/ProfessionalDevelopment.asp One of our courses is sure to meet your own specific learning needs.

Certificate Program: Independent Practice for Dental Hygienists

Legislative changes in some Canadian jurisdictions now allow the establishment of independent dental hygiene practices. The business environment is challenging and requires energy and hard work, and to be successful, dental hygienists must now develop the necessary management skills to complement their role as primary preventive oral care providers.

Negotiation

As a dental hygienist you negotiate on an ongoing basis in your day-to-day life. When negotiating an issue that is very important to you, do you find yourself at the losing end of the negotiation? You may already be a good communicator, but you may like to improve your negotiation skills to achieve better results and be more effective in all areas of your life. This course will assist you in developing or improving your persuasive communication skills.

Interpersonal Skills

As a dental hygienist it is imperative that you develop your interpersonal skills. Interpersonal skills enable you to work with others harmoniously and efficiently. Employers, co-workers and clients appreciate individuals who get along well with people at all levels. This course will assist you with improving your interpersonal skills, including communication, problem solving, and teamwork abilities.

The Professional Role

As a dental hygienist, you may ask yourself, "Am I acting like a professional?" This course will enhance your professionalism. How you look, talk, write, and act at work determine how you are perceived as a professional. Theoretical and practical concepts are presented, along with opportunities for self reflection and critical thinking.

Help Your Clients to Stop Gambling With Their Health

As members of the tobacco cessation team, dental hygienists can play a key role in helping their clients to stop using tobacco. This course presents current facts about tobacco use and tobacco cessation. It will help you integrate this knowledge into the DH process of care in order to implement an evidence-based tobacco cessation program for your clients. Aussi offert en Français

Difficult Conversations

Do you find it hard to deliver tough messages? Do you get anxious when others get angry at you? Do you avoid conversations that may end in arguments? The Stitt Feld Handy Group Online Difficult Conversations Course is designed to help you have the hard but necessary conversations that we all have to face.



CDHA Community Calendar

Plan ahead. Participate in the events posted on this page. Or mark your calendar.

UPCOMING EVENTS

6 March 2010	Regina, SK	Saskatchewan Dental Hygienists Association (SDHA)/CDHA: Independent Practice Workshop
15–17 April 2010	Vancouver, BC	Catch us at the Pacific Dental Conference
6–8 May 2010	Montreal, QC	Vision to Venture: CDHA Leadership Event
9–11 June 2011	Concurrently in Winnipeg, MB, and Halifax, NS	CDHA National Conference

ANNUAL EVENTS



National Dental Hygienists Week™
La semaine nationale des hygiénistes dentaires

11–17 April 2010 is National Dental Hygienists Week™

An annual event dedicated to heightened awareness about preventative oral health care, and to help Canadians understand the role and importance of the dental hygiene profession.

Every April is Oral Health Month.
Help spread the message.

Executive Director's message, Ends ...continued from 263

for a mechanism to allow regulatory authorities to maintain their high standards in light of the 2009 introduction of internal trade legislation that compromises their abilities to reject dental hygienists who they feel do not meet an appropriate entry level practice standard. In addition, CDHA works together with provincial dental hygiene associations to lobby the government for self regulation.

Developing further research to understand what is happening in the dental hygiene community is critical to the advancement and protection of the community. We recently conducted a national labour survey so that the employment trends in each geographical area can be compared with one another. CDHA has also conducted a survey of dental hygienists in private business earlier in May.

Our connectedness opens avenues to develop creative solutions and to provide and receive professional support. These are complex concerns that require effort on a number of fronts. "Thank you" to those who have taken the time to write or call your provincial association and the CDHA about your concerns. The huge makeover to our website has recently added web tools that provide a safe place for you to connect with other dental hygienists who are facing similar issues, and who want to take action to address these issues.

It rests with us to use our energies symbiotically, and with determination to achieve the type of professional environment that allows dental hygienists to serve their clients in the best possible way. Let's initiate positive ripples together. Our connectedness is vibrant. ©CDHA

Advertisers' index

Dentsply Canada (<i>Cavitron® THINsert™</i>)	327
GlaxoSmithKline (<i>Sensodyne</i>)	260
Hu-Friedy (<i>Symmerty IQ</i>)	328
P&G Professional Oral Health.	261, 262, 292–293
Quantum Health	288
Sulcabrush.	285
Sunstar	258
TD Insurance Meloche Monnex.	318

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, 6, November–December 2009.

Photo credit: ©CDHA. Reproduced with the permission of Amie Banting.



Amie Banting, registered restorative dental hygienist, opened her independent practice *Heritage Dental Hygiene* in Niagara-On-The-Lake, Ontario, in June 2008. Amie graduated from the Canadian Institute of Dental Hygiene in 2003, and completed the restorative dental hygiene program at George Brown College in 2006.

Position for commercial advertisement

Position for commercial advertisement