PROFESSIONAL ISSUES

Public Health Dentistry: 2000 to 2020

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Public health dentistry has greatly evolved in Canada since the 1960s. With the widespread introduction of water fluoridation and the development of public education programs, a growing segment of the Canadian population will never experience significant dental problems. Over the next twenty years, the challenge for public health dentistry will be to ensure that all Canadians attain and maintain the highest level of oral health possible. New initiatives are targeting groups at greatest risk of preventable oral health problems. This article looks at some of the current issues in public health practice, with a focus on programs and activities taking place in Ottawa-Carleton.

Fluoride: Refining the Message

The promotion of water fluoridation and fluoride supplements has resulted in a dramatic reduction in decay rates. While strategies to promote daily exposure to fluoride have been highly effective, two issues are emerging that could affect public acceptance of fluoride:

1. Several independent studies have demonstrated an increase in the incidence of fluorosis in children in Canada.
2. Some research has suggested a causal link between fluoride and risk for hip fracture.

Fluoride levels in bone and body systems are dose-related. There are no known health-related implications of prolonged exposure to low levels of fluoride ions. It is important to remember, however, that the practice of adding fluoride to the drinking water and toothpaste is relatively recent. The challenge is to continue to champion the benefits of fluoride while ensuring that any adverse effects connected to overexposure are minimized.

Message to the Public

Fluoride is widely accepted by Canadians as being beneficial to their dental health. If information about the adverse effects of fluoride (fluorosis currently being the only known risk) is not transmitted properly, it will raise unwarranted health concerns. Over the next decade, the message will need to evolve to *maximize the benefits of fluoride while minimizing the risk of potential side effects*. Public education strategies will have to maintain this delicate balance, emphasizing that fluoride is a "therapeutic agent" that must be used at "therapeutic levels" and where necessary. This message, however, is not without risk and may result in increased calls to reduce or eliminate water fluoridation. Such a reduction would hurt those who need fluoride most.

Role of the Dental Practitioner

The role of the dental practitioner will broaden to include assessing, reviewing, and recording a patient's risk for decay and to "prescribing" an appropriate dose and frequency of fluoride — for example, telling a patient *to use a smudge of this "therapeutic agent" (toothpaste) once a day*.

Harmful Habits

Juices and Soft Drinks

Large sums of marketing and advertising dollars go into promoting the health and social benefits of both fruit juice and carbonated beverages. The cost of these products has dropped significantly over the past decade while their consumption (individual volume and frequency) has increased, especially among teens and children. Because of their high acidity and sugar content, these products can have a devastating impact on oral health when consumed frequently or in large quantities,

particularly when combined with poor oral hygiene.

Data from annual school surveys (1994-97) of the nutritional habits and dental health of children in high needs schools in Ottawa-Carleton provide some general trends with respect to the intake of liquids:

1. Decreased water consumption substituted with large volumes of fruit juice, sweetened drinks and carbonated beverages.
2. A direct correlation between the proximity of a convenience store and the consumption of drinks other than water.
3. Children of new Canadians (in Canada less than 10 years) are more likely to substitute water and milk with sweetened drinks and carbonated beverages.
4. A significant increase in case reporting of rampant tooth decay, particularly in teens. The most common factor in this group was the consumption of two litres or more a day of carbonated soft drinks containing phosphoric acid and caffeine. (The volume and incidence of daily exposure among teens crosses all socio-economic strata.)

Many schools in Ottawa-Carleton are actively promoting healthier habits and issuing notices to parents advising them not to send juice or other drinks to school, and informing them that convenience stores are off limits during school hours. Schools are also promoting the benefits of water.

Smoking

Dental research has provided increasing evidence of the direct relationship between smoking and periodontal disease. The potential for visible attachment loss or gingival irritation provides a unique opportunity to link smoking with a direct consequence. This new information increases the need for the dental profession to be more involved in advising patients of the potential effects of smoking on their dentition and to connect patients who express an interest in stopping to smoke with other health care providers or programs specializing in smoking cessation.

Dental Care for Low-Income Canadians

Poor oral health has become a marker for children and others living in poverty in Canadian society. Data from annual school inspections in the Ottawa area reveal that approximately 3% of school children under the age of 14 have an obvious need to see a dentist (clearly visible caries, broken restorations). The picture changes dramatically when only the schools from low-income neighbourhoods are included in the analysis. In moderate and high needs schools — defined as those who have many children from low-income families — 20% of children are in obvious need of care. Of those, 75% are recipients of social assistance. The remaining 25% are largely from low-income families. Approximately two-thirds do not have dental insurance.

While regular professional care is important for everyone, it is particularly critical for those at greatest risk. The participation rate among social assistance recipients in government-sponsored dental plans remains below 30%.[1] While broad-based programs encouraging patients to establish relationships with dentists have been effective for higher income groups, the same result is not seen among low-income groups. The pattern of attending in emergency situations and placing little value on preventive care further strengthens stereotypes and the marginalization of low-income groups with respect to dental care.

Historically, public dental clinics have been established to promote and ensure access. They target populations in need, such as street youth, school children of low-income families, seniors or people living in remote areas. In Ottawa-Carleton, dental clinics for social assistance recipients have been established as one way to reduce social barriers and to ensure that widest possible care is provided even with limited dollars. (This is accomplished by using salaried dental staff.) By the mid-1990s, the participation rate in this program exceeded 40%. Unfortunately, funding for the program has been reduced for adults and only treatment for urgent conditions is now offered. Approximately 25% of social assistance recipients are eligible for urgent care and attend the clinics annually.

Providing care to individuals actively receiving social assistance is complicated by an array of psychological and social problems. While social spending has been targeted to those in greatest need, recent program reductions are creating further gaps. The role of "public" health will be to find innovative ways to address the needs of all members of our society.

Oral Health Promotion

Oral health promotion efforts continue to focus on increasing awareness of the importance of dental health. One such promotional effort, *Keep Your Teeth For Life,* is targeted to low-income and new Canadians of inner cities.[2] It is being adapted specifically to Ottawa-Carleton, with posters being designed and placed in strategic locations in the community.

Public clinic activities focus on empowering individuals with the necessary skills to influence their own health. Understanding what good hygiene means and translating this into a daily routine remains problematic. Findings from a number of outreach activities indicate that there is generally a poor understanding of the "mechanics" of brushing and flossing. For example, of 22,000 people surveyed in the regional clinics in Ottawa, 98% responded that you should brush your teeth daily. When asked to demonstrate how they brushed, the majority (about 80%) demonstrated brushing the occlusal surfaces only. A small percentage actually understood what plaque was and how it related to tooth decay. Obviously, proper brushing and flossing are "taught" and "learned" skills. When a grandparent or parent lacks these skills, the children are likely to have poor oral hygiene and to be at far greater risk for dental decay. While many traditional

programs focused on providing oral hygiene education directly to children, efforts now focus on educating teachers, parents and other primary care providers.

Another way of addressing this problem is through brushing clubs in schools. These programs, usually an extension of breakfast clubs, have been shown to improve the oral hygiene status and to reduce the decay rates of participating students. Successful brushing programs require the support of parents, schools, teachers, volunteers and dental products manufacturers. The Health Department in Ottawa supports interested schools by assisting with the organization of the program and connecting them with manufacturers willing to donate essential supplies (toothbrushes and toothpaste).

The Aging Population

There is an existing unmet need for special dental services for the elderly. This need will grow over the next twenty years as the proportion of Canadians over the age of 70 rises dramatically. Many elderly will be able to continue to seek care in traditional private practice settings. Recent promotional activities by organized dentistry and public health have focused on promoting lifelong dental care for seniors. Fortunately, far more Canadians will maintain most if not all their own teeth throughout their lifetime. The tremendous strides in endodontics, implant and prosthetic dentistry have created many beautiful and artfully reconstructed dentitions. The question now is, How will this work be maintained for individuals in their eighties, nineties and even hundreds if they are no longer able to reasonably attend their usual private dentist? Alternative methods of care delivery need to be developed to ensure that oral health for all Canadians is maintained into their old age. Outreach dental programs currently exist on a very limited scale, one notable example being a program in Montreal where dental teams using portable equipment visit homebound seniors.

Seniors in Health Care Facilities

Institutionalized seniors represent another growing segment of the population requiring access to dental expertise, preventive strategies and care. While some individuals can continue to travel to a dental office, the majority require transfer by ambulance, which is costly, and must be accompanied by support staff. Even when the necessary logistics are arranged in advance, the resident may not be medically or psychologically able to attend the visit when it is scheduled, resulting in lost productivity for dental care providers.

One health factor affecting dental care to seniors in institutions is dementia, which is increasing among the elderly population. Depending on the type of dementia, individuals will tolerate varying degrees of disruptions in their daily routines and their cooperation can vary greatly within the span of a few minutes. When there is minimal interruption to the daily routine, it is possible to complete routine dental visits that are productive for the dental team and the patient. Otherwise, interruptions can be stressful for both the patient and the providers.

A jointly administered project at Island Lodge, a facility in Ottawa, offers a glimpse of some of the efforts required to address the special needs of the elderly (**Table I**). Two departments of the Region of Ottawa-Carleton, "Homes for the Aged" and the Health Department, worked cooperatively to establish a dental clinic at Island Lodge. The clinic, which has been operating since January 1997, provides assessments and general dental care to approximately 380 residents. The clinic is staffed by salaried personnel from the Health Department. A dentist, dental hygienist and dental assistant visit weekly to provide care for the residents. The medical coordinator schedules patients in consultation with nursing staff to select an optimal time for the resident and to ensure that appointments do not conflict with other activities. On the day of the clinic, nursing staff prepare residents for the dental visit and transfer patients directly into the dental chair when required. A volunteer assists with the transfer and provides reassurance during the procedure.

Given the extra time needed to work with such a large number of special needs patients, and the fact that no government funding is available, the clinic is operated on a cost-recovery basis with the residents paying for their dental care. For every hour of clinic time, an additional hour must be dedicated to organizing the logistics of the dental visit, preparing letters to families outlining the options and cost of care, and the implications of not proceeding with rudimentary treatment or prevention. Conferences with families and staff are a routine part of providing services.

The need to expand services for this segment of the population is

Table I

Comparison of Admission Factors at Island Lodge Long-Term Care Facility

	1985	1998
Average age of residents	75	86
Average length of stay (years)	7	4
Percentage of residents with dementia as primary reason for admission	30%	70%
Percentage of residents admitted due to frailty or inability to provide self-care	70%	30%
Percentage of residents with complete dentures at admission	70%	30%

growing. In Ottawa-Carleton, the number of long-term care beds will increase by over 600 in the next three years to address the current shortage. Plans are underway to expand dental services to the other regionally administered facilities; however, this represents only a fraction of the total facilities in Ottawa, many of them privately operated.

Other changes affecting seniors will have an impact on the delivery of dental care:

1. Improvements in home care have allowed many individuals to live in their own homes indefinitely.
2. There is a general lack of chronic care placements in Canada. Many individuals will be "temporarily" placed in facilities where oral health care may be a low priority.

Unfortunately, individuals coming into long-term care settings are either far frailer or in later stages of dementia then when compared to the mid-1980s. Many will also arrive at facilities after a considerable period without regular care. This evidence further supports the need for more outreach programs to assist seniors.

Skills For Practitioners

There is no shortage of need or demand for initiatives to address the oral health needs of Canadians. Individuals wishing to work with populations at greatest risk require the same core skills that are needed to establish and maintain a successful private dental practice. Additional demands when working in the public health environment include:

Communication Skills

- The ability to explain often complex subjects in an accessible and understandable manner.
- The ability to demonstrate empathy, caring and understanding.
- The ability to care for individuals whose lives are often in turmoil and whose behaviour is socially inappropriate (need for conflict resolution and negotiation skills).

Organization Skills

- The ability to achieve consensus and to motivate others to understand the importance of oral health and the actions needed to attain optimal oral health.

Addiction Training

- The ability to understand the emotional and social (not just pharmacological) issues related to addiction. ■

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

References

1. Based on data supplied to the Ministry of Community and Social Services, Province of Ontario, by the Ontario Dental Association regarding Family Benefits Allowance dental plan.

2. *Keep Your Teeth For Life,* 1998, Central Toronto Community Health Centre. The booklet was sponsored by the Community Foundation for Greater Toronto and the Dentistry Canada Fund. To order the booklet: 1-416-703-8481 (tel.).

INFORMATION PACKAGE

The CDA Resource Centre has information packages on the following topics: fluoridation, nutrition, tobacco and dental care for the geriatric patient. CDA members can order these materials by contacting the Resource Centre at:

Tel.: 1-800-267-6354 (ext. 2223),

Fax: (613) 523-6574,

E-mail: info@cda-adc.ca

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